# **Prospectus**

For the issue of 37.5 million new ordinary shares at an issue price of A\$0.40 each to raise A\$15 million.



Neuren Pharmaceuticals Limited ARBN 111 496 130

Investment in the Shares offered in this Prospectus should be considered speculative. The issue is underwritten by Emerging Growth Capital Pty Limited.

**Cover:** Neuron cell body (purple) with numerous synapses (blue). Communication from one neuron flows to another neuron across a synapse, the small gap separating neurons.

Neuren Pharmaceuticals is a leading biopharmaceutical company with a focus on neuroprotection and metabolism.

The Company has five proprietary families of compounds, with an extensive IP portfolio.

Neuren has an extensive network of collaborators and research partners including Pfizer, Duke University, the Walter Reed Army Institute, University of Texas Medical School and Metabolic Pharmaceuticals.

### IMPORTANT INFORMATION

#### Important notice

This Prospectus is dated 15 November 2004 and was lodged with the Australian Securities and Investment Commission (ASIC) on that date. No responsibility for the contents of this Prospectus is taken by ASIC or the Australian Stock Exchange (ASX). Neuren Pharmaceuticals Limited (**Neuren** or the **Company**) will apply to the ASX for listing and quotation of its Shares on ASX within 7 days after the date of this Prospectus.

No securities will be issued on the basis of this Prospectus later than 13 months after the date of this Prospectus.

Prospective investors should read the full text of this Prospectus in its entirety and seek professional advice where necessary. The information contained in individual sections is not intended to and does not provide a comprehensive review of the business and the financial affairs of the Company or the New Shares offered under this Prospectus.

**Offer in New Zealand** A New Zealand Investment Statement which complies with the Securities Act 1978 (NZ) has been prepared in connection with the Offer. This Prospectus can only be distributed to members of the public in New Zealand if accompanied by the New Zealand Investment Statement. The Company will provide a copy of the Prospectus in addition to the New Zealand Investment Statement. The Company will, within 5 business days of receiving a request from an offeree in New Zealand for a copy of this Prospectus, send or cause to be sent to that offeree, free of charge, a copy of this Prospectus.

**Foreign Jurisdictions (other than New Zealand)** The distribution of this Prospectus in jurisdictions outside Australia and New Zealand may be restricted by law and does not constitute an offer in any place in which, or to any person to whom, it would not be lawful to make such an offer. Persons who come into possession of this Prospectus should seek advice on and observe any restrictions on accepting an offer or distributing the Prospectus. Any failure to comply with restrictions may constitute a violation of applicable securities laws. Applicants who are resident in countries other than Australia or New Zealand should consult their professional advisers as to whether any governmental or other consents are required or whether any other formalities need to be considered and followed.

**Electronic Prospectus** A copy of this Prospectus can be downloaded from the website of eGCapital at www.egcapital.com. The offer constituted by this Prospectus in electronic form is only available to residents in Australia. Persons who access the electronic form of this Prospectus should ensure that they download and read the entire Prospectus. A paper copy of this Prospectus is available free of charge during both the Exposure Period and the Offer Period by contacting eGCapital. In addition, residents of New Zealand may obtain a paper copy of the Prospectus together with the Investment Statement free of charge by contacting eGCapital.

**Application Form** The Corporations Act prohibits any person from passing the Application Form on to another person unless it is attached to a paper copy of this Prospectus or the complete and unaltered electronic form of this Prospectus. Applications for New Shares may only be made on the application form attached to this Prospectus.

**Disclaimer** No person is authorised to give any information or make any representation in connection with the Offer which is not contained in this Prospectus. Any information or representation not contained in this Prospectus may not be relied on as having been authorised by the Company or its Directors.

**Exposure Period** The Corporations Act prohibits the Company from processing Applications received until after the Exposure Period. The Exposure Period is a 7 day period that commences on the date of this Prospectus, which may be extended by ASIC by a further 7 days. The purpose of the Exposure Period is to enable examination of the Prospectus by market participants prior to the offering of New Shares. That examination may result in the identification of deficiencies in the Prospectus, in which case any application received may need to be dealt with in accordance with Section 724 of the Corporations Act.

The electronic form of the Prospectus will be made available in Australia during the Exposure Period at www.egcapital.com. Applications under this Prospectus received during the Exposure Period will not be processed until after the expiry of the Exposure Period. No preference will be conferred on applications received during the Exposure Period.

**Definitions and Abbreviations** Defined terms and abbreviations used in this Prospectus are explained in the glossary at the end of this Prospectus.

**Financial Amounts** The principal currency used in this Prospectus is the New Zealand dollar because this is the functional currency of the Company. Where New Zealand dollars are used, they are denoted by NZ\$. Where Australian dollars are used, they are denoted by A\$. In this Prospectus, where New Zealand dollars are converted into Australian dollars an exchange rate as at 1 November 2004 of 1.00 Australian dollar for every 1.0925 New Zealand dollars has been used.

Time All references in this Prospectus to time refer to Sydney AEDST, unless stated otherwise.

**How to Invest** Applications for New Shares can only be made on the application form accompanying or attached to this Prospectus. Instructions on how to apply are set out in section 3 of this Prospectus and on the back of each application form.



### Unique Scientific Rationale

Neuren's science is based on molecules that occur naturally in the body and on well characterised biological systems and pathways. Effective and Efficient Clinical Development Strategy

The Company is conducting trials in conditions that provide readily available patients, maximum control, minimum timeframes and outcomes that are indicative of efficacy in additional and larger indications.

### Successful Phase I Trials

Glypromate® has successfully completed Phase I trials. Glypromate® will commence Phase II trials in 2005, aimed at alleviating the cognitive deficit resulting from cardiac bypass surgery. Further, Neuren's key aim is to move its other drug candidates into clinical trials, with the second lead candidate progressing into a Phase I trial planned for 2005 and additional Phase II trials planned for 2006 and 2007.

### Experienced Management and Board

Neuren has skills covering biopharmaceutical product development from basic research and discovery, through preclinical and clinical development, to market approval and commercialisation. Neuren scientists and consultants have published more than 400 scientific papers.

# CORPORATE DIRECTORY

#### Directors

Dr Robin Congreve Mr David Clarke Mr Tom Amos Mr Trevor Scott Dr Douglas Wilson Chairman Managing Director, CEO Non Executive Director Non Executive Director Non Executive Director

Chief Scientific Officer Professor Peter Gluckman, FRS

Chief Financial Officer Mr Peter Bailey

Corporate Head Office

Level 3, 2-6 Park Avenue, Grafton, Auckland New Zealand

Australian Registered Office

Level 13, 122 Arthur Street, North Sydney NSW 2060

### Underwriter and Lead Manager

Emerging Growth Capital Pty Limited Level 3, 1 Castlereagh Street Sydney NSW 2000 Australia

#### Australian Legal Advisor

Gadens Lawyers 77 Castlereagh Street Sydney NSW 2000

### New Zealand Legal Advisor

Simpson Grierson 92-96 Albert Street Auckland, New Zealand

#### Auditors

PricewaterhouseCoopers 188 Quay Street Auckland, New Zealand

### Independent Accountant

Pitcher Partners NSW Corporate Pty Limited 60 Castlereagh Street Sydney NSW 2000

### Independent Science Review

Aoris Nova Pty Ltd Biomedical Building, 1 Central Avenue Australian Technology Park Eveleigh NSW 1430 Australia

### Patent Attorney

Fliesler Meyer LLP Four Embercadero Centre San Francisco, USA

#### Share Registry

ASX Perpetual Registrars Ltd Level 4 333 Collins Street Melbourne VIC 3000



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# EXECUTIVE SUMMARY

NEUREN PHARMACEUTICALS LIMITED IS A BIOPHARMACEUTICAL COMPANY ENGAGED IN DEVELOPING AND COMMERCIALISING DRUG THERAPIES IN TWO AREAS: NEUROPROTECTION, TO PREVENT AND TREAT INJURIES AND DISEASES OF THE NERVOUS SYSTEM, AND THERAPIES TO TREAT DISEASES ASSOCIATED WITH GROWTH HORMONE.

### The Company's key attributes include:

- > Unique Scientific Rationale based on molecules that occur naturally in the body and on well characterised biological systems and pathways.
- > Large, Patented Pipeline five families of compounds covered by 72 individual patents and/or patent applications in Australia, New Zealand, Japan, Europe and the U.S.
- > Credible Partners and Collaborators including Pfizer (Pfizer, the world's largest pharmaceutical company, will also be a 8.1% shareholder post IPO), Duke University (Durham, North Carolina, USA), Walter Reed Army Institute of Research (Silver Spring, Maryland, USA), University of Texas Medical School (Houston, Texas, USA), and Metabolic Pharmaceuticals Limited (Melbourne, Australia).
- > Large Market Opportunity targeted markets have significant unmet need with little or no current competition. In the initial targeted areas in neuroprotection for Cardiac Surgery, Stroke and Traumatic Brain Injury and later the chronic diseases (such as Multiple Sclerosis, Parkinson's Disease and Alzheimer's Disease), the estimated market opportunity in major markets is over US\$11.0 billion p.a. The therapeutic targets in diseases of growth and metabolism (such as Metabolic Syndrome and Breast Cancer) have estimated markets of over US\$7.0 billion p.a.
- Effective and Efficient Clinical Development Strategy conducting trials in conditions that provide readily available patients, maximum control, minimum timeframes and outcomes that are indicative of efficacy in additional and larger indications.
- Successful Phase I Trials the first lead candidate Glypromate® has successfully completed Phase I trials. Glypromate® will commence Phase II trials in 2005, aimed at alleviating the cognitive deficit resulting from cardiac bypass surgery. Further, Neuren's key aim is to move its other lead candidates into clinical trials, with the second lead candidate progressing into a Phase I trial planned for 2005 and additional Phase II trials planned for 2006 and 2007.
- Sound Commercialisation Strategy developing early collaborations and partnerships with groups able to validate products, reduce risks, enhance skills and provide contract revenue. The key strategy for revenue generation is outlicencing of drug candidates post Phase II clinical trials. As at the date of this Prospectus, contracted revenue and confirmed grants for the twelve months to 31 December 2004 was in excess of NZ\$2.2 million.
- Experienced Management and Board with skills covering biopharmaceutical product development from basic research and discovery, through preclinical and clinical development, to market approval and commercialisation. Neuren scientists and consultants have published more than 400 scientific papers.



# CHAIRMAN'S LETTER

#### Dear Investor,

I have much pleasure in introducing Neuren Pharmaceuticals Limited to you. I have been a seed investor in the Company and have seen it grow and mature to the point of its Initial Public Offering. As a New Zealand company we have chosen to seek our primary listing to be on the Australian Stock Exchange because of the relative depth and sophistication of the market in the biotechnology sector.

With its deep pipeline of novel drug candidates, truly exceptional staff and consultant resources, sharply focussed development plan, extensive global alliances, and ongoing revenue-generating activities, Neuren is exceptionally well positioned as one of the region's leading biopharmaceutical companies. The Company has a Board and management team with the requisite skills and experience to build Neuren into a major biopharmaceutical company and the success of our Phase I clinical trial of Glypromate<sup>®</sup> is an indication of the extent of the Company's skills and experience the Company holds.

Please read this prospectus carefully before making your investment decision. It contains detailed information regarding our operations, strategies and objectives, financial position and the potential risks associated with an investment in the Company.

Together with my fellow directors, I commend this offer to you and look forward to welcoming you as a shareholder.

Yours sincerely,

1. Cogu

Dr Robin Congreve Chairman



### **SECTION 1**

# OFFER SUMMARY AND KEY DATES

## **Offer Summary**

Neuren is seeking to raise A\$15 million through the fully underwritten Offer of 37.5 million New Shares at an issue price of A\$0.40 each. (The functional currency of the Company remains NZ\$).

### Amount to be Raised

		% OF SHARES ON ISSUE AT ALLOTMENT
Amount to be raised	A\$15,000,000	
Offer price per Share	A\$0.40	
Offer price per Share NZ\$ payment option	NZ\$0.44	
Number of existing shares (immediately prior to the allotment		
of New Shares under the Offer and excluding any Shares that		
may be issued pursuant to Options currently on issue)	62,500,000	62.5%
Number of New Shares being offered under the Offer	37,500,000	37.5%
Total number of Shares immediately after allotment of New		
Shares under the Offer (excluding any Shares that may be issued		
pursuant to Options currently on issue or allocated)	100,000,000	100.0%
Indicative market capitalisation on quotation of the Company		
at the Offer Price	A\$40,000,000	
Options issued or allocated (exercise price NZ\$0.39 (A\$0.357) expiry Ma	rch 2009) 17,487,627	

For details of the existing Shareholders and Optionholders in the Company please refer to Section 2 of this Prospectus under the heading "Existing Shareholders and Optionholders".

# Indicative Key Dates

Prospectus lodged with ASIC	Monday 15 November 2004
Opening Date	Tuesday 23 November 2004
Pre-registered Offer Closing Date	Friday 10 December 2004
NZ\$ payment option Closing Date	Wednesday 15 December 2004
Closing Date	Friday 17 December 2004
Expected date for dispatch of transaction confirmation statements	Thursday 23 December 2004
Expected date for the quotation of Shares on ASX	Tuesday 11 January 2005

The Directors expressly reserve the right to vary the Offer dates. The Directors also reserve the right not to proceed with the Offer. In that case application monies will be returned without interest. In any event, no application form for Shares will be accepted, nor will Shares be issued until the expiry of a minimum period of seven days or any longer period required by ASIC under section 727(3) of the Corporations Act after lodgement of this Prospectus with ASIC.



### **SECTION 2**

# **OVERVIEW**

### The Company



The brain protects itself after injury by producing a range of neuroprotective compounds. These compounds, together with the knowledge that most brain cells die from injury that occurs over days following injury, form the basis of the Company's neuroprotection portfolio. Neuren was established by the merger of two companies, NeuronZ Ltd, which was originally formed to undertake research and development in the area of neuroprotection, and EndocrinZ Ltd, which was formed with Pharmacia & Upjohn Company, now Pfizer, to undertake research and development in the area of growth and metabolism. The science, which is at the heart of all of Neuren's activities, was originally discovered within the University of Auckland's School of Medicine and further developed and commercialised by Neuren.

Neuren has established operations in Auckland, where the majority of its 20 employees and consultants are based. It also has offices in Bethesda, Maryland, near Washington DC, to support its partnerships, regulatory and business development activities in the USA.

Neuren's extensive intellectual property portfolio, which comprises 72 patents (issued and pending) and five broad families of products, is enhanced by an arrangement with the Liggins Institute of the University of Auckland, under which Neuren has an ongoing right to own intellectual property produced by the Liggins Institute relating to neuroprotection, growth and metabolism.Neuren and its predecessors have been working in these fields for over 15 years (see Table 2.1).

### Neuroprotection Programme

When the nervous system is injured, the brain produces self-protective molecules. These molecules and their analogues form the basis of Neuren's neuroprotective portfolio. Also following injury, the death of nerve cells occurs over a prolonged period of many hours or days, which provides a "window" for therapeutic intervention to limit the degree



Neuren's lead compound, Glypromate<sup>®</sup> protects against cell death. Phase I clinical trials have been completed. of damage. The combination of these two critically important biological phenomena provides a powerful platform for drug development. Neuren scientists were among the first to discover these principles and to use them as the basis for drug design. The compounds developed by Neuren have application not only to acute brain injuries associated with stroke, cardiopulmonary bypass surgery (CPB) and traumatic brain injury but also in chronic neurological conditions such as Alzheimer's Disease, Parkinson's Disease and Multiple Sclerosis.

Neuren's lead compound, Glypromate®, has been shown in animal models

to provide potent protection against cell death and its consequences, for multiple types of cells and areas of the brain across a wide therapeutic window. These and other characteristics give Glypromate<sup>®</sup>, and potentially the related family of compounds, a powerful set of attributes. The Company has completed a Phase I clinical trial for Glypromate<sup>®</sup>, the results of which were released on 21 October 2004. The drug was shown to be safe and well tolerated in all treated subjects. There were no clinically significant findings related to Glypromate<sup>®</sup> administration and no serious adverse events were recorded.



PG.9

The first clinical indication for Glypromate<sup>®</sup> is brain injury resulting from CPB, specifically, Cardiac Bypass Graft Surgery (CABG). CABG involves stopping a patient's heart and using a "heart–lung machine" to oxygenate the blood and pump it through the body. There are in excess of 800,000 CABG procedures performed annually with as many as 70% of patients showing some impairment of brain function at the time of discharge. Neuren is actively preparing for a Phase II trial of Glypromate<sup>®</sup> in CABG patients which the Company plans to initiate in 2005. Its second lead compound, NNZ-2566, is also expected to enter clinical trials during 2005, targeting traumatic brain injury. These indications



Cognitive decline is suffered by up to 70% of CABG patients at the time of discharge. The initial clinical target for Glypromate<sup>®</sup> will be to inhibit this effect.

together with stroke represent a potential world market of more than US\$6 billion per annum.



Neuren's two lead candidates, Glypromate<sup>®</sup> and NNZ-2566, target addressable markets of US\$6.0bn. Neuren also is developing additional classes of compounds. Two new classes of compounds called diketopiperazines (DKPs) and macrocyclics have similar underlying biological principles as Glypromate® but have been rationally designed in order to improve their potential performance as drugs. The DKPs and macrocyclics are candidates for both acute and chronic neurological conditions. Neuren also has discovered an entirely new class of compounds called Neural Regeneration Peptides (NRPs) which are being developed for neurological conditions such as Multiple Sclerosis, spinal cord injury, Alzheimer's Disease and Parkinson's Disease.

### Growth Hormone: Metabolism and Cancer Programme

Traditionally, Growth Hormone (GH) has been studied and developed for GH deficiency states or growth-related disorders. More recently, however, the role of GH in metabolism and cell growth has become better appreciated, and a range of new therapeutic targets is being investigated. In particular, a relatively new therapeutic target called Metabolic Syndrome has recently been described. While most large pharmaceutical companies have focused on treating the individual consequences of this syndrome (hyperlipidemia, hypertension and obesity) rather than its causes, Neuren is directly targeting the underlying processes that result in the multifactorial clinical phenomena.

Some cancers, including breast and colon cancer, are now recognised as being dependent on growth hormone generated within the tumour itself. Neuren's consultants within the Liggins Institute have identified a critical signalling pathway associated with this GH production and are now developing antagonists to this system as potentially unique therapeutic entities. Neuren is well positioned to lead the field in these areas due to its proprietary technology as well as its unique relationship with the Liggins Institute and leading international GH researchers. This allows Neuren to own and control development of novel therapeutics in key markets beginning with the creation of new GH-related molecules and antagonists.



Neuren has three other classes of prospective neuroprotective compounds targeted at acute and chronic diseases and conditions.

# History of Neuren Pharmaceuticals

### Table 2.1 – Neuren's Development Timeline

	NeuronZ Ltd NEUROPROTECTION	EndocrinZ Ltd METABOLISM	
Pre 1995:	and neuroprotection including discovery on neuroprotectants, elucidation of the procession of the proc	nd others in diseases of the nervous system of the role of growth factors as endogenous asses of delayed cell death after brain injury, actions of growth hormone	
Apr 1995	Company incorporated as a 100% subsidiary of University of Auckland		
1995-2000	Neuroprotective effect of Glypromate® discovered by Prof. Peter Gluckman, and scientific team	Consulting and contract work undertaken by Prof. Gluckman and others to Pharmacia (later Pfizer) in growth and metabolism including discoveries leading to several patent families	
Jul 2000	Series A Capital Raising supported by Macquarie Technology Fund, New Zealand Seed Fund, Oceania & Eastern Group and others. Glypromate® IP portfolio transferred from University of Auckland		
Oct 2000	Glypromate® selected as lead compound and enters preclinical phase		
Mar/Aug 2001	Diketopiperazine compounds discovered		
Dec 2001	Decision made to promote discovery and development programme for NRPs	EndocrinZ Ltd formed through an agreement between Pharmacia & UpJohn Company (now Pfizer), Oceania & Eastern Group and New Zealand Seed Fund.	
Sep 2002	Sale of Brain Monitor technology	First meeting of scientific advisory board – internal discovery platform confirmed	
Nov 2002	NNZ-2566 confirmed as lead Glypromate® analogue (Protease resistance enabling oral formulation)	Successful completion of first contract research programme Research and development contracts signed with University of Queensland and Hebrew University	
May 2003	Macrocyclics discovered		
Dec 2003	Glypromate® completes successful toxicology studies	Pfizer reconfirms contractual relationship with EndocrinZ Ltd	
Jan 2004	pharmaceuticals Established through the merger of NeuronZ and EndocrinZ		
Apr 2004	Establishes US presence to maintain Pfizer relationship and support US-based regulatory and development activities		
May 2004	Signs Collaborative Research and Development Materials Transfer Agreement with the Walter Reed Institute of Army Research for the development of NNZ-2566 addressing Traumatic Brain Injury		
June 2004	Bioavailability of oral formulation of NNZ-2566 confirmed First GH analogue with desirable activity profile demonstrated		
Jul 2004	Glypromate <sup>®</sup> commences Phase I		
Oct 2004	Glypromate <sup>®</sup> completes Phase I clinical trial successfully		



An overview of the Company's pipeline and potential indications is presented below.

## Overview of Neuren Pipeline

COMPOUND FAMILY	DRUG CANDIDATE	POTENTIAL INDICATIONS
1. Glypromate®	Glypromate®	CABG surgery
	NNZ-2566 IV	Traumatic Brain Injury; stroke (acute and stroke recovery (sub-chronic))
	NNZ-2566 oral	Traumatic Brain Injury and sub-chronic; mild cognitive impairment; chronic neurological diseases
2. Neural Regeneration Peptides (NRPs)	NNZ-4717 and others	Multiple Sclerosis; spinal cord injury; chronic neurological diseases
3. Diketopiperazines (DKPs)	NNZ-2591 and others	Chronic neurological diseases
4. Macrocyclics	NNZ-2599, NNZ-2606 and others	Chronic neurological diseases
5. Growth Hormone (GH) Related	GH Variants	Lipid metabolism disorders (metabolic syndrome)
	GH related compounds	Breast cancer and other epithelial cancers

## **Business Operations**

Neuren's business operations are based on focussed, market-oriented research and discovery, to progress lead molecules through formal preclinical development and Phase I and II trials, and then to seek partnerships with larger pharmaceutical companies for further clinical development, approval and marketing, together with revenue from

milestone achievements and royalty income. This strategy is supported by carefully designed clinical trials in indications chosen to be easily managed and to provide quick and definitive results.

The intellectual property owned and controlled by the Company provides an extremely valuable platform for rational drug design while the intellectual capital represented by staff, consultants and partners provides the capability for highly targeted and accelerated drug development and commercialisation.

Neuren has established relationships with respected international collaborators, which the Company believes will help to drive its development programmes.

Neuren has identified new therapeutic opportunities for novel Growth Hormone-related compounds in metabolism and cell growth,

and metabolic syndrome.

potentially leading to treatments for cancer

These are summarised below:

INDICATION	COLLABORATOR
CPB/CABG	Duke Clinical Research Institute (USA)
TBI	Walter Reed Army Institute of Research (USA)
Stroke/Sub-chronic	University of Texas Medical Centre (USA)
Metabolism and Cancer	Pfizer (USA, Aust) and Metabolic Pharmaceuticals Ltd (Aust)

Neuren's capacity to generate revenue is evidenced by its success in commercial transactions which include the multimillion dollar sale of the brain research monitor, a medical diagnostic device developed and sold in 2002.

In addition, the Company has negotiated and successfully manages multiple research contracts with Pfizer, Metabolic Pharmaceutical and others.



## Management Team

Neuren's CEO is David Clarke who has technology, finance and MBA qualifications. Prior to joining Neuren, Mr Clarke was CEO of one of the largest hospital systems in Australasia, including responsibility for research and development into metabolic diseases.

The Chief Scientific Officer is Prof. Peter Gluckman, who was instrumental in developing Neuren's science. He was elected a Fellow of the Royal Society (London) and is a foreign member of the Institute of Medicine of the National Academy of Sciences in the USA. He is regarded as one of New Zealand's leading scientists.

The Board of Neuren is chaired by Dr Robin Congreve, one of New Zealand's leading businessmen with a background in law and investment. Other members are Trevor Scott, with finance and accounting experience, Tom Amos with engineering and investment banking experience and Dr Doug Wilson, who was previously world head of medical and regulatory affairs at Boehringer Ingelheim. Dr Wilson has overseen multiple drugs at all phases of development, including bringing many drugs successfully to the market in the USA.

# Existing Shareholders and Optionholders

HOLDERS OF EXISTING ORDINARY SHARES:	NO. OF SHARES	% HOLDING POST IPO
NeuronZ Ltd*	12,345,898	12.3%
New Zealand Seed Fund Management Ltd	10,291,670	10.3%
Pharmacia & Upjohn Company (Pfizer)	8,081,438	8.1%
K One W One Ltd	6,250,424	6.3%
Perpetual Trustee Company Limited ATF – Macquarie Technology Fund 1A	4,812,059	4.8%
Perpetual Trustee Company Limited ATF – Macquarie Technology Fund 1B	4,812,059	4.8%
The Congreve Family Trust	3,704,244	3.7%
Hazardous Investments Ltd	3,293,711	3.3%
Oceania & Eastern Biotech Ltd	2,195,801	2.2%
Janik Enterprises Ltd	1,646,856	1.6%
Others (11 Holders)	5,065,840	5.1%
Total Existing Ordinary Shares	62,500,000	62.5%

\* Neuronz Limited is controlled by the University of Auckland (via Auckland UniServices Limited). The University holds 67.2% of Neuronz.

HOLDERS OF SHARE OPTIONS:	NO. OF OPTIONS	% HOLDING FULLY DILUTED
Share Option Plan		
David Clarke*	4,241,888	3.6%
Peter Gluckman*	4,760,341	4.1%
Other Staff and SAB members (22 individuals)*	5,083,614	4.3%
Auckland UniServices Limited	1,872,892	1.6%
Oceania & Eastern Biotech Ltd	1,528,892	1.3%
Total Share Options	17,487,627	14.9%

\* The Company intends to issue these Options under the Share Option Plan prior to the Closing Date.

The options on issue or to be issued have an exercise price of NZ \$0.39.



# Purpose of Offer

Neuren owns five families of compounds at various stages of preclinical and clinical development, all of which are demonstrating signs of efficacy. The Company is seeking to raise funds both to implement its clinical development programme and to accelerate its ongoing research activities.

Funds raised will be applied primarily towards the clinical advancement of Neuren's two lead compounds – Glypromate® and NNZ-2566. Over the course of the next two years, the Company expects to conduct a Phase II trial for Glypromate® and a Phase I and Phase II trial for NNZ-2566 acute. In addition, the Company may conduct a Phase I trial for NNZ-2566 oral. These trials address a range of both acute and chronic neurological conditions as detailed in Section 5.



Neuren's lead candidates in neuroprotection are derived from a molecule closely related to growth hormone. This relationship provides the linkage between Neuren's neuroprotection and growth hormone related compounds and the basis for integration of the two research programmes.

## Use of Funds

The Company will raise A\$15 million from the issue of the Shares under the Offer. It is intended that those funds will be used by the Company as summarised in the table below:

USES OF FUNDS (TO 31 DECEMBER 2006)	NZ\$000'S	A\$000'S
Human Clinical Trials & Associated Development Costs Glypromate® and NNZ-2566 clinical trials Further lead candidate preclinical and clinical development Manufacturing and formulation	7,995	7,320
Scientific & Research Costs Growth Hormone Related Neuroprotection portfolio development Research compound validation costs	3,090	2,830
Management & Administrative Costs Executive Office costs	2,720	2,490
Patent Costs Filing & maintenance	840	770
Costs of the Offer Underwriting fees & other listing costs	1,740	1,590
	16,385	15,000

As the Neuren business develops, the specific allocation of funds may vary from that anticipated above or elsewhere in the Prospectus.



### **SECTION 3**

# DETAILS OF THE OFFER

## The Offer

A total of 37,500,000 New Shares at an Offer Price of A\$0.40 per New Share are being offered to investors in Australia pursuant to the Prospectus and in New Zealand pursuant to the Investment Statement, to raise a total of A\$15 million.

The New Shares being offered under this Prospectus and the Investment Statement will be new fully paid ordinary shares issued by the Company. Section 13 of this Prospectus has further information on the terms on which the Company will issue Shares.

### Application for New Shares

An Application for New Shares can only be made by completing the application form attached to or accompanying this Prospectus. Instructions on how to complete the application form are on the back of each application form.

### THE ISSUE COMPRISES THREE COMPONENTS

#### (A) BROKER FIRM OFFER.

An offer to firm brokers' clients to subscribe for New Shares at A\$0.40 per Share, subject to a minimum application of 5,000 New Shares (A\$2,000) and thereafter in multiples of 1,250 New Shares (A\$500).

#### Application for Broker Firm Offer.

Applicants who receive a firm Offer should return their completed application form and application monies to the broker from whom they received their firm allocation of New Shares, as instructed by your broker.

#### (B) PRE-REGISTERED HOLDERS.

An offer to pre-registered persons to apply for New Shares at an issue price of A\$0.40 per Share, subject to a minimum application of 5,000 New Shares (A\$2,000) and thereafter in multiples of 1,250 New Shares (A\$500).

Neuren, in conjunction with one if its research partners, Metabolic Pharmaceuticals Limited (MBP), has taken the step to pre-register MBP shareholders, with a registered address in Australia and New Zealand, to receive a yellow pre-printed application form to apply for New Shares under this Prospectus. The registration date for these MBP shareholders is 9 November 2004. MBP shareholders who are entered onto the MBP register after 9 November 2004 can request a copy of the Prospectus and application from, but no pre-registration will be possible.

Pre-registered persons will have received a yellow application form accompanying the Prospectus. Pre-registered persons are able to subscribe for New Shares in Neuren and make payment via BPAY®.

Lodgment of the pre-registered application form under the terms of this Offer and the payment of application monies using BPAY<sup>®</sup> constitutes an irrevocable offer made in accordance with the provisions of this Prospectus and the pre-registered application form.



### Application for Pre-Registered Persons.

If you elect not to use BPAY<sup>®</sup> to submit your application money for the pre-registered persons offer, complete the accompanying yellow application form in accordance with the instructions set out on the back of the application form and return it, together with the full amount payable, subject to the minimum application described above, so that it is received by Neuren's share registry no later than 5.00 pm (AEDST) on 10 December 2004.

### PRE REGISTERED HOLDERS CANNOT PAY IN NZ\$.

#### (C) GENERAL PUBLIC OFFER.

An Offer to Australian and New Zealand residents at A\$0.40 per share, with applications to be made on a blue application form found in the back of this Prospectus, subject to a minimum application of 5,000 shares (A\$2,000) and thereafter in multiples of 1,250 shares (A\$500).

#### Application for Shares under the General Public Offer

To submit your application money for the general public Offer, complete the attached blue application form in accordance with the instructions set out on the back of the application form and return it, together with the full amount payable, subject to the minimum application described above, so that it is received by Neuren's share registry no later than 5.00 pm (AEDST) on 17 December 2004.

**The Share Registry** ASX Perpetual Registrars Limited Level 4 333 Collins Street Melbourne VIC 3000 Australia

#### The Underwriter

Emerging Growth Capital Pty Ltd PO Box R 417, Royal Exchange Sydney NSW 1225 Australia

or by hand to: Level 3, 1 Castlereagh Street Sydney NSW 2000

Telephone: (+61 2) 9222 1991 Email: neurenprospectus@egcapital.com

The application form must be accompanied by a cheque in Australian Dollars drawn on an Australian branch of an Australian bank, crossed 'Not Negotiable'. Payment for New Shares must be made in full at the issue price of A\$0.40 per New Share and cheques should be made payable to 'Neuren Pharmaceuticals Limited Application Account'. Completed application forms must reach the share registry, or Underwriter, by no later than the Closing Date. Payments by cheque will be deemed to be made when the cheque is honoured by the bank on which it is drawn.

If an application form is not completed properly, or if the accompanying payment is for the wrong amount, it may still be treated as valid. The decision of the Company as to whether to treat an application as valid or how to construe it will be final.

# NEW ZEALAND RESIDENTS SHOULD USE THE APPLICATION FORM ATTACHED TO THE ACCOMPANYING INVESTMENT STATEMENT WHICH WILL BE SENT TO NEW ZEALAND APPLICANTS.

### PLEASE NOTE THE NZ\$ PAYMENT OPTION CLOSES ON 15 DECEMBER 2004.

## Allotment

The allotment of New Shares offered by this Prospectus will take place as soon as practical after the Closing Date and the grant of ASX permission for the Company to be admitted to the Official List and have its Shares listed on the ASX unconditionally or on conditions acceptable to the Directors.

Acceptance of an application by the Company creates a legally binding contract between the applicant and the Company for the number of New Shares for which the application is accepted. Acceptance takes place only on allotment and issue of New Shares.

There are no provisions to increase the number of New Shares in the event of oversubscriptions. The Directors, in consultation with the Underwriter, reserve the right to reduce the allocation of New Shares to any applicant below that applied for or to reject any application, in part, or in full.

Pending the allocation and allotment of New Shares under the Offer, all application monies will be deposited into a separate bank account to be held in trust for so long as the money is liable to be repaid under the Corporations Act.

Where the number of New Shares allotted is less than the number applied for, or where no allotment is made, the surplus application monies will be refunded by cheque to the applicant within 14 days after the Closing Date. Where an application is rejected, the application money will be refunded in full. Interest will not be paid on refunded application money, irrespective of whether allotment takes place.

Successful applicants will be notified in writing of the number of New Shares allotted to them as soon as practical after the Closing Date.

### Opening and Closing of the Offer

The Opening Date for the Offer is intended to be the business day after the Exposure Period expires, which is expected to be 9.00am (AEDST) on 23 November 2004. The Closing Date for the Offer is intended to be 5.00pm (AEDST) on 17 December 2004. The Closing Date for pre-registered applicants is 5.00pm (AEDST) on 10 December 2004. The Closing Date for the NZ\$ payment option is 5.00pm (NZDST) on 15 December 2004. The Directors reserve the right to change the Opening Date or the Closing Date or both without notice.

### Taxation

Please see Section 13.13 for information concerning tax in relation to a New Zealand company.

### Applicants outside Australia and New Zealand

No action has been taken to register or qualify these New Shares or otherwise permit a public offering of the New Shares the subject of this Prospectus in any jurisdiction outside Australia and New Zealand. Applicants are referred to the section entitled 'Foreign Jurisdictions (Other than New Zealand)' in the Important Notice at the beginning of this Prospectus.

It is the responsibility of applicants outside Australia and New Zealand to obtain all necessary approvals for the allotment and issue of New Shares pursuant to this Prospectus. The return of a completed application form will be taken by the Company to constitute a representation and warranty by the applicant that all relevant approvals have been obtained.



# **Risk factors**

Prospective investors should be aware that subscribing for New Shares in the Company involves a number of risks. These risks are described throughout this Prospectus and in particular Section 12 of this Prospectus. Investors are urged to consider those risks carefully before deciding whether to invest in the Company. If necessary, investors should consult their professional adviser.

## Financial Prospects and Dividend Policy

Neuren's financial prospects are dependent on many factors, including the successful commercialisation of its products and the continued success of its research and development programme. As a consequence of the stage of the Company's development, the Directors are unable to provide reliable revenue, profit or cash flow forecasts to prospective investors. At this stage of its development, Neuren operates at a financial loss.

The future payment of dividends is dependent on the achievement of profitability and available cash. As the current focus of the Company is the further development and commercialisation of its therapeutic products, the Directors consider that Neuren will be unlikely to pay a dividend during this period of growth or in the immediate future.

# ASX Listing

An application for the Company to be admitted to the Official List of the ASX and for the official quotation of all the Shares will be made to the ASX within 7 days after the date of this Prospectus.

The fact that ASX may admit the Company to the Official List is not to be taken as an indication of the merits of the Company or the Shares. The ASX, its officers and employees take no responsibility for the contents of this Prospectus.

If granted, quotation of the Shares will commence as soon as is practicable after the issue of statements of holdings to successful applicants.

If permission for official quotation of the Shares is not granted or deemed to be granted within 3 months of the date of this Prospectus, none of the New Shares offered by this Prospectus will be issued unless an exemption is granted by the ASIC permitting such issue. If no issue is made, all application money will be returned within the time permitted by the Corporations Act. Interest will not be paid on any application money refunded.

## CHESS

The Company will apply to the ASX to participate in the Securities Clearing House Electronic Subregister System, known as CHESS. CHESS is operated by the ASX Settlement and Transfer Corporation Pty Ltd (**ASTC**), a wholly owned subsidiary of the ASX, in accordance with the Listing Rules and ASTC Settlement Rules.

The Company will not issue share certificates to successful applicants. Following allotment, the Company will provide each shareholder with a transaction confirmation statement, which sets out the number of New Shares allotted to the shareholder under this Prospectus. The transaction confirmation statement will advise shareholders of their Holder Identification Number to which New Shares have been allotted in the case of a CHESS holding. In the case of an issuer sponsored holding the transaction confirmation statement will display the Securityholder reference Statement. If a shareholding changes during a subsequent month, the shareholder will be issued a holding statement at the end of that month. Shareholders may also request statements at any other time (although the Company may charge an administration fee).

It is the responsibility of applicants to determine their allocation prior to trading of the Shares. Applicants who sell Shares before they receive notice of their allocation do so at their own risk.



# **Restricted Securities**

ASX may, as a condition of granting the Company's application for official quotation of its Shares, classify certain of its existing Shares and Options as restricted securities. If so, prior to the official quotation of the Shares, the holders of the restricted securities will be required to enter into restriction agreements with the Company and, where applicable, an escrow agent. The terms of any such restriction agreement will be as determined by ASX in accordance with the Listing Rules. Any such restriction agreements or escrow agreements will prohibit the transfer of effective ownership or control of those securities subject to those restrictions for such period as ASX may determine, unless the written consent of ASX is obtained prior to any such transfer.

Whilst any decision as to the imposition of escrow restrictions under the Listing Rules will be made by ASX, the Company expects that 62,223,335 Shares and 14,100,700 Options, out of the total of 62,500,000 Shares and 17,487,627 Options on issue or allocated immediately prior to the Closing Date, will be subject to escrow restrictions imposed by ASX.

Additionally, and by agreement with the Underwriters, the Company has sought that its principal shareholders agree to voluntary escrow on their Shares and Options as set out in Section 13.

## Privacy Act

If you apply for New Shares, you will provide personal information to the Company, the Underwriter and the share registry. The Company, the Underwriter and the share registry will collect, hold and use your personal information in order to assess your Application, service your needs as an investor, provide facilities and services that you request, and carry out appropriate administration.

Australian company and tax law requires some of the information to be collected. If you do not provide the information requested, your application may not be able to be processed efficiently, or at all. The Company, the Underwriter and the share registry may disclose your personal information for purposes related to your investment amongst each other, to their agents and service providers or as otherwise authorised under the Privacy Act 1988.

Under the Privacy Act 1988, you may request access to your personal information held by (or on behalf of) the Company, the Underwriter and the share registry. You can request access to your personal information by writing to the Company through the share registry as follows:

ASX Perpetual Registrars Limited Level 4 333 Collins Street Melbourne, VIC 3000 Australia

# Enquiries

If you have any enquiries as to the terms of the Issue, please contact either the broker from whom you received the Prospectus or the Underwriter at the address set out in Section 3.

## Underwriting and Commission

The Issue is conditionally underwritten by Emerging Growth Capital Pty Limited on the terms set out in Section 13. The Company will pay a combined underwriting and management commission of 6.25% and fees as referred to therein.



### **SECTION 4**

# SCIENCE OVERVIEW

### Neuroscience Programme

Neuroprotection involves the use of an agent to prevent disease or injury of the nervous system by inhibiting one or more of a cascade of events leading to damage or death of neurons or other cells. Neuroprotection has emerged as an increasingly important segment of the biopharmaceutical market over the past 10 years and represents a major source of untapped potential for development of new therapeutic products and strategies. Previously, most therapy for neurological



Neuroprotection represents a major source of untapped potential for new therapeutic products and strategies.

disorders was targeted only at the effects rather than the causes; however, as the understanding of the molecular basis of neurological disease and injury increases, so too will opportunities for new approaches to treatment.



Glypromate<sup>®</sup> has been shown to have multiple actions providing potent neuroprotection.

It is now recognised that most neuronal and other cells of the nervous system do not die immediately following an acute insult such as the loss of blood supply to the brain during a stroke or following traumatic brain injury. Instead, cell death may occur over many hours or even days (Figure 4.1). The initial trauma stimulates two pathways to damage – apoptosis and necrosis – over several days thus providing a window of opportunity for therapy. At the core of Neuren's acute neuroprotection programme is the recognition that early intervention in this apoptotic cascade can

result in a reduction in the number of neuronal and other cells that will ultimately die as a result of the trauma.

Preclinical studies with Glypromate® have shown it to exhibit multiple modes of action, including inhibition of apoptosis, blockage of secondary necrosis, prevention of the loss of astrocytes and reduction in activation of the microglia inflammatory process. These multiple actions of Glypromate®, together with its apparent safety profile, make it an ideal compound for development as a neuroprotective agent.



Cell death in the brain as a result of injury such as stroke or traumatic brain injury occurs over many hours or even days.

#### Figure 4.1. Neuren's core hypothesis of neuronal rescue therapy



The range of indications for the use of neuroprotectants includes acute injuries (rapidly occurring insults to the brain) and chronic injuries, often caused by degenerative diseases, that occur over a prolonged period of time:

#### ACUTE

Cerebrovascular and cardiovascular disorders Cerebral infarction Cerebral haemorrhage Central nervous system trauma Traumatic brain injury (closed head and penetrating brain injury) Spinal cord injury Surgery, anaesthesia and infection CPB/CABG Valvuloplasty Endarterectomy Other major surgical procedures Bacterial and viral meningitis **CHRONIC** Neurodegenerative disorders Alzheimer's Disease Huntington's Disease Parkinson's Disease **Multiple Sclerosis** Motor Neuron Disease Miscellaneous neurological disorders Age-related cognitive impairment and dementia

Peripheral neuropathy (diabetic, chemotherapeutic and viral)



# Acute Neuroprotection

In the case of acute brain injury, brain cells proceed through the apoptotic cell death pathway in a predictable and consistent manner and a brief period of therapy is all that is required during the early apoptotic cascade to effect neuronal rescue and to prevent resultant necrotic brain cell death. Neuren has found that Glypromate<sup>®</sup> and its analogues are capable of protecting cells with neurons and glial cells (e.g. astrocytes, microglial cells) in the brain. The glial cells perform key functions in the brain, e.g. production of the naturally occurring protective factors, such as IGF-1. This represents a significant advantage in treating and preventing conditions resulting from acute injury. Importantly, Glypromate<sup>®</sup>'s multiple modes of action and its robust effects have exhibited benefits both with respect to preventing cell death and its neurobehavioural consequences.

Attributes of an effective acute neuroprotective therapy noted in the Jain 2004<sup>+</sup> report on neuroprotection include:

- > Possibility of administration by a route that leads to rapid entry into the body
- > Passage across the blood-brain barrier with targeted action on the nervous system
- > Quick elimination by the body after the intended effect has been achieved

Neuren believes its candidate neuroprotective compounds must meet all of the criteria as well as acting on both cell death pathways (apoptosis and necrosis) and on the glial cells. In addition, the favourable safety profile exhibited by Glypromate<sup>®</sup> in the Phase I study serves to increase confidence in the eventual value and marketability of the entire Glypromate<sup>®</sup> family.

The anticipated advantages of Glypromate® include:

- > Potent, naturally occurring neuroprotection
- > Effects neuronal rescue by blocking both the apoptotic cascade and secondary necrosis
- > Protects both neurons and astrocytes
- > Prevents microglia upregulation
- > A single dose is effective across a wide therapeutic window post-injury
- > Readily crosses the blood-brain barrier following injury
- > Rapidly cleared from circulation
- > Favourable safety profile
- > Straightforward manufacturing and low cost of goods

### Chronic Neuroprotection

Chronic indications are those neurodegenerative conditions which evolve over a longer period of time as a result of underlying disease. Progressive neuronal loss is an important factor in the development of chronic neurodegenerative diseases such as Parkinson's Disease and Alzheimer's Disease and it has been established that apoptosis also contributes to brain cell death in most neurodegenerative diseases. Therefore, the basic mechanisms of acute and chronic neurological diseases are likely to be similar but differ in their rates of progression (e.g. hours or days *vs* weeks or months). Because Neuren's small molecule neuroprotective compounds effectively inhibit apoptosis at



Chronic indications are degenerative conditions that occur over time, rather than by injury, and include Parkinson's Disease and Alzheimer's Disease. Neuren believes that its second lead compound, NNZ-2566, shows potential as a long term therapy for these conditions.

modest dose levels, the Company believes that its chronic neuroprotective therapies are likely to ameliorate these diseases. The DKPs and macrocylic compounds hold particular promise for these indications. The Company's second lead compound, NNZ-2566, exhibits oral bioavailability as well as potent neuroprotective qualities, making it an excellent candidate for development as a potential long-term therapy.

† Neuroprotection. Drugs, Companies and Markets. Jain Pharma Biotech Report. 2004.





Neuren's family of Neural Regeneration Peptides (NRPs), compounds may exhibit clinical benefits in chronic neurodegenerative diseases.

### Neuronal Regeneration

While preventing further neurological damage and cell death is a critical therapeutic goal, and provides a large unmet market in itself, an even more complex endeavour is the repair of damage or its consequences sustained prior to treatment. Neuronal regeneration—re-establishing the connections between and the function of brain cells—will directly contribute to functional recovery. In most cases, however, the brain's self-repair mechanisms are insufficient to support functional recovery. One family of naturally occurring compounds discovered by Neuren, called Neural Regeneration Peptides

(NRPs), has shown significant activity in regenerating neuronal cells. These unique compounds strongly activate neuronal differentiation, proliferation, migration and the neurogenesis processes. Such compounds could potentially be very effective agents to treat a wide variety of neurodegenerative diseases, as well as spinal cord injury. Neuren is actively engaged in further elaborating the biology of these peptides, validating their efficacy in multiple animal models, and improving their potential as drugs using rational drug design by Neuren's medicinal chemistry group.

#### Figure 4.2





The image shows the migration of neurons across a 3.5mm gap in the presence of an NRP. Such neuronal repair is potentially applicable in addressing spinal cord injury.

### Growth Hormone: Metabolism and Cancer Programme



Historically, the focus of the pharmaceutical industry has been on the treatment of Growth Hormone deficiency.

Neuren's discoveries in relation to GH have resulted in the pursuit of metabolic disorders and related cancers.

Growth Hormone (GH) promotes growth in children and plays an important role in adult metabolism. A major emphasis of the pharmaceutical industry to date has been the development of GH to treat conditions caused by GH deficiency and, to a lesser extent, the development of antagonists for acromegaly caused by excess GH production. In recent years, however, it has become increasingly clear that the direct and indirect effects of Growth Hormone and IGF-1, the molecule produced in response to GH, play a significant role in the function of many cells and in many disease processes. With the expertise of scientists and physicians in the Liggins Institute and other collaborations available to the Company, Neuren has developed a strategy to pursue two opportunities that result from the expanding knowledge of GH biology. The development efforts in which Neuren is

engaged involve the use of proprietary, GH-like molecules to treat metabolic disorders such as Metabolic Syndrome and new antagonist compounds to treat certain cancers, including breast cancer. The Company has entered into new molecule discovery contracts with research institutes in Australia and Israel to produce candidate compounds for testing in Neuren's GH research programmes.





Neuren is modifying the molecular structure of GH so that new patentable GH-like molecules are identified which have enhanced activity for specific therapeutic purposes but with reduced side effects.

### METABOLISM

The growing incidence of Metabolic Syndrome in the Western World has resulted in a major clinical problem with significant consequences for both the cost of medical care and quality of life in those populations. Central obesity, high blood pressure and insulin resistance characterise this syndrome, which leads to heart failure, strokes and Type 2 diabetes. GH treatment potentially can ameliorate a number of these clinical symptoms. However, as noted above, GH affects more than just fat metabolism and clinical use of GH has been associated with a number of undesirable and potentially serious side effects including fluid retention, glucose

intolerance and joint and muscle pain, which may make it inappropriate for use as an anti-obesity drug. Long-term treatment might also stimulate unwanted growth effects. Neuren is therefore modifying the molecular structure of GH-related molecules, so that new, patentable, GH-like molecules are identified which have enhanced activity for specific therapeutic purposes but with reduced side effects. Preliminary data generated by Neuren scientists provides the conceptual basis for rational design of a new generation of GH variants with enhanced therapeutic specificities and minimal unwanted side effects.

### CANCER

Metastatic cancer involves cells that exhibit uncontrolled growth and properties that enable them to invade local tissues and migrate to distant sites in the body. The key to controlling or treating cancer is reversing or preventing the transformation of cells to the malignant form. Breast cancer is the most common cause of cancer initiated death in women. Aberrant GH production by breast cancer cells has been detected in most metastatic breast cancers. Recent discoveries by Neuren's consultants within the Liggins Institute show that GH plays a central role in the malignant transformation of breast cancer cells. This phenomenon is due to GH produced within the tumour, not to GH in



Neuren is developing novel molecules targeted at reducing GH production in breast tumour cells. Figure 4.3 shows the difference between cells that do not express GH within the cell and those that do.

circulation. Liggins Institute and Neuren scientists have uncovered mechanisms by which this transformation occurs and are developing novel approaches to the treatment of breast cancer based on these findings. Significant reduction in the activity of GH improves the effectiveness of chemotherapeutic agents *in vitro*. These findings may extend to other forms of cancer including prostate and colon cancer.

### Figure 4.3



Without Growth Hormone Breast cells that do not express GH remain non-aggressive and non-invasive



With Growth Hormone

Cells made to express GH become aggressive, proliferative and invasive



### **SECTION 5**

# STRATEGY, PRODUCTS AND PIPELINE

### **Clinical Development Strategy**

Neuren has a wide range of compounds with a broad range of potential applications. The strategy to determine which targets to pursue is based on the cost and complexity of trials, the ease with which results can be validated, and assessment of market need and commercial opportunity. For example, Cardiac Artery Bypass Graft (CABG) surgery has been selected for the Glypromate® trial in part due to the relative ease and efficiency of conducting a clinical trial under well-controlled conditions. Unlike traumatic brain injury and stroke, CABG is a controlled elective surgical procedure, therefore the measurement of cognitive function before and after the procedure is possible. It is envisaged that success in this first indication should lead to partnering opportunities for stroke and other indications for which clinical trials are more complex but where there is substantial unmet need with little competition. Neuren believes that its strategy of first undertaking the generally shorter and typically less expensive clinical trials for acute conditions and then pursuing the chronic conditions represents the most cost-effective means of increasing shareholder value while controlling risk. This same rationale drives the Company's commitment to seek partnerships with larger companies that have the resources and experience to manage large-scale Phase III clinical trials, product approval and commercialisation. Further, Neuren's strategy should enable the Company to pursue more studies for more indications, potentially increasing the probability of early clinical success and partnering.

There is potential that Neuren's ongoing discovery research work in cancer and metabolism will generate a number of candidate GH variant and antagonist molecules. Each of these will be targeted to a specific lead indication which will be confirmed by *in vivo* animal models.

PRODUCT	CURRENT DEVELOPMENT STAGE	FUTURE DEVELOPMENT MILESTONE(S)
Glypromate®	Completed Phase I	Initiate Phase II
NNZ-2566 acute	<i>In vivo</i> efficacy studies and final pharmacokinetics GMP manufacturing	Complete preclinical toxicology; complete Phase I for acute and initiate Phase II
NNZ-2566 oral	Formulation development Oral pharmacokinetics	Confirm efficacy of oral formulation in animal models; initiate preclinical toxicology and Phase I
DKPs	Confirm dose and route of administration	Confirm efficacy in a chronic disease model. Lead candidate selection and pharmacokinetics
Macrocyclics	Confirm neuroprotection in vivo	Confirm efficacy in a chronic disease model
NRPs	Confirm efficacy <i>in vivo</i>	Lead candidate selection; initiate preclinical development including formulation and stability studies
GH Variants	In vivo studies initiated	Establish manufacturing standards; initiate preclinical development
GH Antagonists	Discovery	Initiate in vivo studies

#### Table 5.1. Neuren's Anticipated Milestone Summary



# **Product Pipeline**

Neuren's product pipeline comprises five families of compounds - four classes targeting brain injury or disease and one class targeting metabolism and cancer. Figure 5.2 represents the stage of development for each class or subclass. The stages reflect the classic paradigm of drug development: discovery of new molecules, testing in vitro and in vivo models, selection of lead compound candidates, formulation of the selected compounds, development of manufacturing methods and production of initial batches, formal preclinical pharmacology and toxicology, initial clinical studies and outlicensing for further clinical development and commercialisation.

### Figure 5.2. Product Pipeline and Stage of Development



As indicated, Glypromate®, Neuren's lead compound, has completed Phase I clinical trials. A Phase II trial is planned for 2005 aimed at preventing cognitive decline following CABG procedures. NNZ-2566 is expected to commence Phase I clinical trials in 2005 targeting TBI. In 2006, Neuren plans to progress NNZ-2566 into Phase II clinical trials for TBI and possibly conduct a Phase I study of oral NNZ-2566 for sub-chronic or chronic administration. An oral version of NNZ-2566 has shown good bioavailability appropriate for a once-daily drug. Long-term treatment of chronic neurological disease is greatly simplified by use of an oral compound. A final formulation will be selected and moved through development to Phase I. By 2006, Neuren's lead discovery compounds among the DKPs, macrocyclics and NRPs are expected to have advanced through preclinical development, with lead candidates selected for clinical trials.



# The Neuroprotection and Neurorepair Compounds

#### **GLYPROMATE®**

Glypromate<sup>®</sup> (or GLYcine-PROline-GlutaMATE) is a naturally occurring small molecule neuroprotectant, derived from IGF-1 (Insulin-like Growth Factor), that is produced in the brain.

#### Figure 5.3 Insulin-like Growth Factor 1



Molecular model showing how Glypromate<sup>®</sup> is derived from a naturally occurring growth peptide.

Glypromate<sup>®</sup> provides dramatic protection of multiple areas of the brain, even when administered following a significant period of time after the initial injury.

#### Glypromate<sup>®</sup> fragment

The pathophysiology of neurodegeneration associated with CABG is believed to result from impaired flow of oxygen to parts of the brain caused by microemboli or reduced availability of oxygen and nutrients and is much the same as for cardiac surgery or to effectively treat stroke. Neuren, therefore, expects Glypromate<sup>®</sup> to be an effective therapy for stroke

In addition to preventing loss of neurons following injury, Glypromate<sup>®</sup> results in long-term behavioural benefits in treated animals.

and traumatic brain injury patients. There are currently no effective drugs on the market to prevent the cognitive decline that follows stroke. Glypromate<sup>®</sup>'s potency in preventing cell death, its apparently excellent safety profile, rapid clearance from the body, its ability to cross the blood–brain barrier and its protective capabilities in multiple areas of the brain and multiple cell types make it an excellent candidate for acute brain damage.

#### NNZ-2566

NNZ-2566 is a small molecule analogue of Glypromate<sup>®</sup> with good oral bioavailability and up to ten times the neuroprotective potency of Glypromate<sup>®</sup>. It is being developed for a number of acute, short-term and chronic conditions including acute and recovery phase treatment of traumatic brain injury, recovery phase treatment of stroke, chronic neurodegenerative disorders (age-related cognitive impairment, Multiple Sclerosis and Parkinson's Disease) and peripheral neuropathies.

Neuren's assessment of NNZ-2566 for traumatic brain injury is being conducted in collaboration with the Walter Reed Army Institute of Research (WRAIR), the largest and most diverse biomedical research laboratory in the US Department of Defense. WRAIR is currently conducting preclinical efficacy studies and will be evaluating NNZ-2566 in penetrating brain injury models. Preliminary results are extremely encouraging, showing a significant reduction in neurobehavioural consequences of penetrating brain injury. Subject to positive results, the Institute has indicated an interest in supporting collaborative development of the compound with a view to rapidly progressing through Phase I and Phase II trials for traumatic brain injury. Under such an agreement, the US military would gain access to the product at Neuren's manufacturing cost and free of any royalties for the treatment of traumatic brain injury among military personnel. Neuren would retain unencumbered rights to commercialise the product in all non-military markets, both for traumatic brain injury and for any additional target indications.



### DIKETOPIPERAZINE COMPOUNDS (DKPs)

These are small molecules that are both neuroprotectant and stimulate neurite outgrowth. They have the potential for use in the treatment of chronic neurodegenerative diseases as well as acute conditions. The most advanced in this family (NNZ-2591) exhibits *in vivo* efficacy in animal models of hypoxic-ischemic injury and crosses the blood–brain barrier. The compounds are potent and exhibit persistent effects at very low concentrations. *In vivo* testing is underway.

### MACROCYCLIC COMPOUNDS

The macrocyclics are a potent class of neuroprotectant compounds (patent pending). Two compounds, NNZ-2599 and NNZ-2606, have shown neuroprotective activity *in vitro* and are currently undergoing *in vivo* efficacy testing.

### NEURAL REGENERATION PEPTIDES (NRPs)

Neuren has identified NRPs which are proving effective at neuronal regeneration in animal models. There are currently no products on the market capable of stimulating neuronal repair or regeneration. The NRPs, therefore, give rise to broad therapeutic potential across a range of neurodegenerative conditions. Lead NRP compounds are now undergoing *in vivo* experimentation to select the most appropriate for preclinical development.

### **GROWTH HORMONE-RELATED COMPOUNDS**

Human Growth Hormone (GH) is known to have diverse and potent effects within the body and has been commercially available in synthetic form for over ten years. However, as noted above, Neuren is presently engaged in discovering new molecules that either simulate selected desirable metabolic actions of GH with fewer unwanted side effects or inhibit the effect of GH on certain cancer cells. The Company has contracted with the Liggins Institute and research groups in New Zealand, Australia and Israel.

Candidate GH molecules are evaluated in established animal models of Metabolic Syndrome and promising compounds will be further developed with respect to manufacturing, formulation, pharmacology and toxicology.

For cancers, and particularly breast cancer, potential GH antagonists will first be tested *in vitro* on primary human tumour material or established cell lines, then in established animal models of human cancer. Again, lead compounds will be characterised and optimised for manufacturing, formulation and pharmacology then entered into preliminary *in vitro* and *in vivo* toxicology.

#### THE MICRO-PUMP

In May 2004, Neuren was awarded a grant of NZ\$3.2 million over four years from the New Zealand Government to advance the development of a proprietary micro-pump system for the precise delivery of small volumes of low dose treatments directly into the brain. This is an early stage project which is run in parallel with Neuren's core drug development activities. The project is funded entirely through grants and does not divert Company resources from its drug development programme. The micro-pump offers potential for early outlicensing. In addition, it provides a platform for additional efficacy and mechanism of action studies with Neuren's proprietary neuroprotective compounds in a highly controlled environment.



# NEUREN'S OPERATIONS

Neuren's operations encompass research and discovery, clinical development, contract research and corporate administration. Figure 6.1 provides an overview of the relationships between the Company's activities and the various third parties with whom Neuren is involved.



**SECTION 6** 



### Research & Discovery



Neuren has contracted an automatic right to own all the future intellectual property generated by the Liggins Institute in the areas of neuroprotection, growth and metabolism. Neuren's Research & Discovery programme, led by Professor Peter Gluckman is based on an international set of collaborations and a special relationship with New Zealand's largest Medical Research Institute, the Liggins Institute. The Liggins Institute, with its approximately 90 staff, is established as part of the Faculty of Medical and Health Sciences, University of Auckland and carries out research in the fields of Neuroprotection, Reproductive Health, Fetal Physiology and Growth and Metabolism. Neuren and the Liggins Institute are housed in the same building and Neuren has access to the Institute's technology, equipment and laboratories on a fee-for-service basis. Neuren has contracted an automatic right-to-own intellectual property generated by the Liggins Institute in the fields

of neuroprotection and growth and metabolism both as the direct result of Neuren contracts but also many other non commercial contracts. Key Institute staff are contracted as consultants to Neuren on a fixed term basis. This arrangement between Neuren and the Liggins Institute requires Neuren to undertake research of a minimum value of NZ\$2.5 million per annum. Should this value not be reached, then Neuren has a 120-day right-of-first-refusal on the intellectual property in these areas. This arrangement extends until 31 December 2007. Details appear in Additional Information in Section 13.



In addition, there is significant research and collaboration conducted with other leading institutes such as the Institute for Molecular Bioscience (Brisbane, Australia) in growth and metabolism, the Walter Reed Army Institute of Research (Maryland, USA) in traumatic brain injury and the University of Texas Medical Center (Houston, USA) in stroke.

### **Clinical Development**

Clinical development has become the lead emphasis for Neuren as the pipeline moves into clinical trials. Dr Doug Wilson has governance responsibility for the clinical development programme of both Glypromate<sup>®</sup> and NNZ-2566. Neuren outsources certain regulatory-driven activities (preclinical toxicology, manufacturing and formulation and clinical trials) to third party suppliers. The current major providers are:

- > Preclinical toxicology Covance Laboratories, Inc. (USA)
- > Manufacture of Glypromate® Bachem AG (Switzerland)
- > Formulation of Glypromate<sup>®</sup> ProPharma Ltd (Scotland)
- > Manufacture of NNZ-2566 ChemoDynamics (USA)
- > Phase I trial of Glypromate® CMAX (Australia)

In addition, the Company uses expert consultants in the areas of manufacturing, regulatory documentation and compliance, and clinical design. Currently retained experts include Seraphim Life Sciences (USA) for Chemistry, Manufacturing and Control (CMC) as well as regulatory documentation and Duke Clinical Research Institute (USA) for Phase II clinical trial and protocol design in conjunction with the Auckland City Hospital's Department of Cardiology. Clinical trials for traumatic brain injury will be conducted in conjunction with the Walter Reed Army Institute of Research (USA).

### **US** Operations

The US operation is a wholly owned subsidiary (Neuren Pharmaceuticals Inc.) of the Company and is led by Mr Lawrence Glass. Its primary commercial function is to manage the major US contracts and relationships including toxicology, manufacturing, the traumatic brain injury programme with Walter Reed Army Institute of Research, the Stroke research programme with the University of Texas Medical Center, and the contract with Duke Clinical Research Institute for Phase II design. In addition, the relationship with Pfizer is predominantly coordinated through Pfizer's New York headquarters and the Company's US subsidiary. Business development activities in the US and Europe also are managed by the US office. The US office provides ready access to the US Food and Drug Administration as well as to academic collaborators, regulatory consultants, contract research organisations and contract manufacturers in the US.

### Contract Research

Neuren performs significant contract research for other companies, including Pfizer and Metabolic Pharmaceuticals. The commercial arrangements, whether fee-for-service, co-development or a mixture of both, are undertaken on a case-by-case basis. Additionally, contract research allows for early formation of significant partnerships that bode well for future commercialisation.

NATURE OF CONTRACT	COMPANY	YEAR AWARDED	ROYALTY POTENTIAL FOR NEUREN
Validation Studies	Pharmacia & Upjohn Company (now Pfizer)	2002	v
Growth Hormone	Pharmacia & Upjohn Company (now Pfizer)	2003	<ul> <li>✓</li> </ul>
Clinical Studies	Pfizer	2003	V
Growth Hormone	Pfizer	2004	_
Metabolism	Metabolic Pharmaceuticals	2004	_
Brain Monitor (ex NeuronZ)	BrainZ Instruments Limited	2002	

#### Table 6.2. Neuren's Recognised Contract Research Revenue

The Company has conducted contract research services for a number of groups including Pfizer and Metabolic Pharmaceuticals. This has provided NZ\$6.4 million in recognised revenue through to 30 June 2004, in addition to the



Brain Monitor proceeds. In some cases, Neuren is entitled to clinical milestone payments and royalties subject to the progression of the compound to commercialisation. These milestones are controlled by Pfizer and are typically from Phase II onwards.

### **Government Grants**

The Company actively pursues New Zealand Government funding for research, development and strategic growth plans that fall within the criteria for eligible funding. Granting bodies include New Zealand Trade & Enterprise, Technology New Zealand and the Foundation for Research Science & Technology.

Collaborative efforts with Australian commercial partners will also be eligible for funding under the Australian New Zealand Biotechnology Partnership Fund, in which the Company is a participant.

VALUE (NZ\$ 000's)	YEAR AWARDED	NATURE OF FUNDING
3,200	2004	Over 4 years, direct funding
520	2004	Over 2 years, 50% funding of costs
600	2002	Over 3 years, direct funding
300	2004	Term of project, 50–100% funding
		of costs
4,620		
	3,200 520 600 300	3,200     2004       520     2004       600     2002       300     2004

The table below summarises current grants awarded:

## Historical Comparison Table of Key Financial Information

The following table summarises the adjusted financial performance, position and cash balance of Neuren for the 6 month period ended 30 June 2004 and the financial years ended 31 December 2003 and 2002 respectively. The table reflects the combined historical audited results of Neuren and of NeuronZ Limited.

The table provides a comparison of key financial information in both New Zealand dollars and Australian dollars at rates that existed as at the end of the periods 30 June 2004, 31 December 2003 and 31 December 2002 respectively.

This summary is given as a general guide to the likely performance and position if the combined historical results were reported in Australian dollars and therefore does not represent an audited position.

	6 MONTHS TO 30 JUNE 2004 NZ\$000's	12 MONTHS TO 31 DECEMBER 2003 NZ\$000's	12 MONTHS TO 31 DECEMBER 2002 NZ\$000's
Research revenue	848	3,460	2,601
Sale of technology	_	_	6,700
Loss after tax	(2,820)	(6,454)	(5,874)
Total assets	15,272	3,804	9,772
Cash and cash equivalents	362	1,516	6,468
	6 MONTHS TO 30 JUNE 2004 A\$000's	12 MONTHS TO 31 DECEMBER 2003 A\$000's	12 MONTHS TO 31 DECEMBER 2002 A\$000's
A\$/NZ\$ FX rate	1.09	1.14	1.07
Research revenue	781	3,043	2,451
Sale of technology	_	_	6,262
Loss after tax	(2,599)	(5,676)	(5,503)
Total assets	14,073	3,346	9,154
Cash and cash equivalents	334	1,333	6,059



# Shares Issued during the Year

On 30 June 2004, 2,331,750 Ordinary Shares were issued, for cash, at NZ\$1.00 per Ordinary Share. The consideration was payable in two equal instalments on or around 30 June 2004 and 30 September 2004.

As at 30 June 2004, NZ\$397,000 has been received in cash with \$1,934,750 forming part of the "Other current assets" as noted on the Proforma Historical Statement of Financial Position (Section 11).

All amounts due here have been subsequently received by the date of this Prospectus.

### Future Revenue

The combination of scientific research capability available through Neuren's own clinical expertise and its collaborations provides a robust foundation for attracting future contract research as well as progressing towards marketable products in its own right.

The extensive links with Pfizer and other international parties (based in Australia, USA, Europe and Israel) provide established routes to both "showcase" and attract outlicensing opportunities post phase II. Neuren has developed these relationships over time by demonstrating a commitment to quality in the Company's scientific principles.

Shareholder value has been protected by a demonstrated strategic approach to multiple product development. This approach has been supported by a history of solid revenue generation as summarised in the above tables.

Contracted revenue for the 12-month period to 31 December 2004 is estimated at NZ\$2.2 million, as at the date of this Prospectus. This is subject to currency movements and Neuren's performance under those contracts.

## Collaborations

Neuren enjoys a number of research and commercial relationships:

### THE LIGGINS INSTITUTE

The Liggins Institute is a multi-disciplinary medical research institute within the University of Auckland. The Institute is recognised as a centre of excellence in neuroscience and endocrine research. Neuren's Chief Scientific Officer, Professor Peter Gluckman, is the founding director of the Liggins Institute.

Under the terms of an ongoing Research Collaboration Agreement, Neuren contracts various research projects to the Institute. In return, the Company owns the rights to all Intellectual Property in these fields developed at the Liggins Institute. Through its relationship with the Liggins Institute, Neuren has access to over 80 staff and secures the expertise of many respected scientists in the neuroprotection and endocrinology fields.

#### **PFIZER**

The Company's commercial relationship with Pfizer commenced in 2001, when Pharmacia & Upjohn (subsequently acquired by Pfizer) became a 50% shareholder in EndocrinZ and began contracting significant research programmes to the Company.

The work conducted for Pfizer involves research on existing Pfizer compounds on a fee-for-service basis.

#### METABOLIC PHARMACEUTICALS LIMITED

Metabolic Pharmaceuticals is an Australian company listed on the Australian Stock Exchange with a focus on the development of therapies for obesity and, most recently, neuroprotection. Metabolic Pharmaceuticals is currently undertaking a Phase II trial for its lead obesity compound, AOD9604. Metabolic Pharmaceuticals has contracted Neuren to conduct a research programme on AOD9604.



#### THE WALTER REED ARMY INSTITUTE OF RESEARCH

The US Army's Walter Reed Army Institute of Research (WRAIR), a large and diverse biomedical research laboratory in the US Department of Defense. Given its primarily military focus, the WRAIR has a particular interest in products that address traumatic brain injury. To this end, the Institute has established unique capabilities to test molecules which address acute neurodegenerative conditions.

In 2004, Neuren entered into a Material Transfer-Cooperative Research and Development Agreement or MT-CRADA with WRAIR relating to the advancement of NNZ-2566 and possibly other neuroprotective compounds for traumatic brain injury. Under the MT-CRADA, the Institute tested the NNZ-2566 in an animal model of penetrating brain injury. Following the positive results generated under the MT-CRADA, WRAIR has formally expressed an interest in entering into a full CRADA to optimise NNZ-2566 for traumatic brain injury and to conduct the clinical trials required for development of the compound with a view to rapidly progressing through Phase I and Phase II trials.

Under the anticipated terms of such an agreement, Neuren would fund preclinical toxicology studies, regulatory submissions and compound manufacturing and would be responsible for oversight of clinical trials and WRAIR would fund the clinical trials in military hospitals. Under the agreement, the US military would gain access to the product at Neuren's manufacturing cost and free of any royalties for the treatment of traumatic brain injury among military personnel. Neuren would retain unencumbered rights to commercialise the product in all non-military markets. While the market for traumatic brain injury is itself very significant (estimated at over US\$1 billion per year), the type of collaboration envisioned with the US Army could significantly facilitate Neuren's commercialisation of NNZ-2566 in other clinical indications.

#### DUKE UNIVERSITY

The Duke Clinical Research Institute (DCRI), part of Duke University Medical Center in North Carolina and associated with the Global Perioperative Research Network, is regarded as one of the leading centres for perioperative clinical research, with a particular focus on cardiovascular surgery. The centre has evaluated data on more than 100,000 bypass surgery patients to assess levels of post-operative neurocognitive decline. DCRI has agreed to lead the study design and protocol development for Neuren's Phase II trial for patients undergoing cardiopulmonary bypass. Dr Mark Newman, the Head of Cardiothoracic Anaesthesiology and a recognised expert in perioperative neuroprotection, will be one of the principal investigators for the trial.

#### UNIVERSITY OF TEXAS MEDICAL CENTER

The Stroke Program at the University of Texas Medical Center at Houston is regarded as one of the leading centres for stroke research. The head of the Stroke Program, Professor James Grotta, an internationally recognised stroke researcher, working with other stroke research teams worldwide, participated in the development of tissue plasminogen activator (TPA), which is used in the management of stroke.

Neuren has entered into an agreement with the University of Texas Medical Center to co-develop novel restorative strategies for stroke and stroke recovery (sub-chronic). This will include Neuren's compounds alone and the use of combination therapies of Neuren compounds jointly with compounds that Professor Grotta's team is developing in Houston. Together, both groups will also jointly test the effects of longer-term neuroprotective and restorative treatments on recovery after stroke.



### SECTION 7

# MARKETS

### Neuroprotection

Neuren is targeting both acute and chronic indications. The markets represented by these conditions are large and growing as a result of the aging population and all face significant unmet medical need, as many of the currently available therapies have limited efficacy and/or significant side effects. Nonetheless, there are virtually no effective neuroprotective drugs on the market and no products to the Company's knowledge that facilitate neuronal repair. Of the therapies that have been approved, most provide only limited symptomatic relief. Hence, there remain significant market opportunities for effective neuroprotection/neurorepair agents and a concomitant commitment by some of the world's leading pharmaceutical and biotechnology companies to develop effective drugs for these indications.

## Market Size

The worldwide market for Central Nervous System (CNS) products, which includes neuroprotection, is estimated at over US\$40 billion<sup>1</sup>, representing 17% of the worldwide prescription drug market. The CNS market is the fastest growing category of drug sales, currently experiencing global annual growth of 17%<sup>1</sup>. North America continues to drive this trend with 16% growth in retail CNS drug sales for 2004 and 67% of worldwide CNS drug sales. The financial burden of CNS damage is very large. The average cost of care for one stroke patient is US\$25,000 per annum. The cost of traumatic brain injury is approximately US\$25 billion per annum. The current annual spend on Alzheimer's disease by US society is approx US\$100 billion. Drugs with neuroprotective effects have a market value of US\$1.8 billion<sup>3</sup>. This is expected to rise to US\$5.1 billion by 2005 and to US\$11.5 billion by 2010<sup>2</sup>.

### Market for Acute Neuroprotective Indications

As noted elsewhere in this Prospectus, Neuren's current development strategy focuses primarily on development of its lead compounds (Glypromate<sup>®</sup> and NNZ-2566) in acute indications with the expectation that the Company will establish partnerships with larger groups to pursue development for chronic indications. The potential markets for acute neuroprotection are large in and of themselves. The table below shows the current market size of each of the acute CNS indications targeted by Neuren. Each indication is detailed further below.

INDICATION	INCIDENCE (US POPULATION)	ESTIMATED WORLD MARKET SIZE OF DRUG THERAPY
Neuroprotectants in CABG surgery	400,000 procedures per year	Currently small due to lack of effective drugs. Potential market estimated at US\$2 billion p.a.
Stroke	800,000 strokes per year	Relatively low due to lack of effective drugs. Potential market estimated at US\$3.5 billion p.a.
Traumatic Brain Injury	1.5 million incidents per year in the USA; 65% hospitalised	Potential market estimated at US\$1 billion p.a.

<sup>1</sup> IMS Global Health Services, 2002

<sup>2</sup> Neuroprotection: Drugs, Markets and Companies. Research and Markets Report 39073

<sup>3</sup> Neuroprotection: Drugs, Markets and Companies. Research and Markets Report 39073


## CABG AND OTHER BYPASS PROCEDURES

There are currently no products approved for neuroprotection for cardiopulmonary bypass procedures (including CABG) and few products in development for this condition despite the fact that a significant proportion (estimated at 30–70% in various studies) of patients undergoing CABG exhibit significant, persistent post-operative cognitive impairment. It has been estimated<sup>4</sup> as many as 200,000 patients in the US alone experience significant long-term cognitive impairment as a result of CABG surgery. With approximately 400,000 CABG procedures performed in the US each year (more than 800,000 worldwide) this represents a potentially important and lucrative market. NeuroInvestment has estimated the potential worldwide market for neuroprotectants in CABG surgery at US\$2 to 3 billion per annum. This potential market is almost entirely untapped and the estimate does not include possible additional surgical and non-surgical indications for prophylactic neuroprotective therapy.

Although traditional CABG surgery in the US is experiencing some competition from new technologies, it is expected to remain among the most frequently performed vascular procedures for the foreseeable future. In addition, patients undergoing valvuloplasty and endarterectomy also are at risk for post-operative cognitive impairment. Persistent cognitive decline also occurs in a significant (>10%) proportion of patients undergoing non-cardiac surgery<sup>5</sup> who also may benefit from prophylactic neuroprotection.

A number of proprietary therapeutics as well as non-proprietary compounds are being evaluated for neuroprotective effects following CABG procedures. Neuren believes that Glypromate<sup>®</sup> and NNZ-2566 offer significant competitive advantages, primarily due to the wider therapeutic window (up to 11 hours in animal studies) associated with prolonged activity throughout the apoptotic cascade in response to brain injury.

## STROKE

Stroke is a leading cause of death among Americans and the leading cause of long term disability. There are nearly 800,000 strokes each year in the US alone.

Stroke represents a significant proportion of the total market potential for neuroprotective agents as these products may be applicable to both the acute and recovery phases of stroke. Nonetheless, the value of this market remains largely unrecognised. The only FDA approved treatment for ischemic stroke is Activase<sup>®</sup> (TPA; Genentech), an expensive thrombolytic which carries with it a significant risk of life-threatening haemorrhage. In addition, TPA must be given within three hours of a stroke occurring, giving a very limited window of opportunity for treatment. Consequently, very few patients (less than 5% in many countries) are eligible for or able to access this treatment. The use of a thrombolytic would not be mutually exclusive to the use of a neuroprotectant. Indeed, provided safety interaction studies were conducted, the two approaches would likely be complementary.

While there are a number of potential neuroprotective compounds currently in various stages of development for stroke, Neuren believes that NNZ-2566's potent neuroprotection activity, combined with its wide therapeutic window, will provide significant competitive advantage.

#### TRAUMATIC BRAIN INJURY

Each year in the US, approximately 1.5 million people sustain a traumatic brain injury with an estimated 1.0 million hospitalised. Of these, 225,000 are moderate to very severe and 50,000 result in death. These injuries can be caused by concussions, penetrating injury, contusions and diffuse axonal injury resulting from tearing of brain tissue. Approximately 5.3 million Americans, 2% of the population, currently live with disabilities related to brain injury. Brain injuries can result in cognitive changes, physical changes and changes in personality and behaviour.

It is estimated that the potential world market for traumatic brain injury to be US\$1 billion, with the US market accounting for US\$500 million.

There are currently no effective products in the market to address traumatic brain injury. Neuren is aware of a number of products in development for this indication, however, the wide therapeutic window and inhibition of subsequent cell loss expected from Neuren's products is an important differentiator and the Company expects these attributes to provide an important clinical advantage.

<sup>&</sup>lt;sup>5</sup> Cognitive dysfunction 1-2 years after non-cardiac surgery in the elderly. H. Abildstrom, LS. Rasmussen, P. Rentowl, Acta Anaethesiol Scand, 2000, vol. 44, pp. 1246–1251



<sup>&</sup>lt;sup>4</sup> NeuroInvestment: No. 100 (September 2003)

# Market for Chronic Indications

The market for drugs that provide neuroprotection and/or neurorepair in chronic CNS diseases is very large and growing rapidly. This market is presently dominated by three drugs approved for the treatment of Alzheimer's Disease, the natural and synthetic interferons for Multiple Sclerosis, and the L-Dopa and monoamine oxidase compounds for Parkinson's Disease. The Alzheimer's Disease market is forecast to grow from US\$2.5 billion p.a. in 2004 to US\$3 billion p.a. in 2007<sup>6</sup>. In 2001, the Multiple Sclerosis market was valued at US\$2.5 billion p.a. DataMonitor<sup>7</sup> forecasts that the total Multiple Sclerosis market will grow to US\$5.4 billion p.a. by 2007. The global Parkinson's Disease market is forecast to grow from US\$2.0 billion p.a. in 2003 to US\$2.4 billion p.a. in 2005<sup>8</sup>. None of the products presently approved for these diseases is more than modestly effective and there remains substantial opportunity for innovative products with few side effects. The table below indicates the prevalence of three of the leading CNS diseases in the US.

INDICATION	PREVALENCE (US POPULATION)	ESTIMATED WORLD MARKET SIZE FOR DRUG THERAPY
Multiple Sclerosis	490,000	US\$2.5 billion in 2001 p.a. – US\$5.4 billion p.a. by 2007
Parkinson's Disease	1.5 million	US\$2.0 billion in 2003 p.a. – US\$2.4 billion p.a. by 2007
Alzheimer's Disease	4.5 million	US\$2.5 billion in 2004 p.a. – US\$3 billion p.a. by 2007

# Growth and Metabolism

Traditionally, GH has been developed for GH deficiency states or growth related disorders. More recently, however, the multi-factorial metabolic effects of GH have been better appreciated and a range of new therapeutic targets are being investigated.

# Metabolic Syndrome

Metabolic Syndrome is a cluster of disorders of metabolism including: high blood pressure, high insulin levels, excess body weight and abnormal blood lipids. This constellation of factors dramatically increases the risk of cardiovascular disease and diabetes and has also been linked to conditions such as polycystic ovarian syndrome. As many as 1 in 5 adult Americans, over 40 million people have Metabolic Syndrome.

The Company estimates that the Metabolic Syndrome market in 2007 will be worth approximately US\$7 billion p.a. With relatively few products in development, this represents an attractive opportunity for Neuren.

Neuren is focusing development on cardiovascular risk reduction in the subset of overweight patients who have Metabolic Syndrome as a primary endpoint. It is anticipated that this will lead to wider medical acceptance as well as greater levels of reimbursement in the marketplace.

# Growth Hormone-Dependent Tumours

The US market for cancer drugs is in excess of US\$20 billion p.a. and growing at 20% per year. New approaches to cancer drug development based on therapies which are more specifically targeted towards well-characterised biological phenomena are contributing to a rapid increase in market size and to improvement in therapeutic benefit.

Neuren plans to develop a family of antagonists for the treatment of hormone responsive tumours, an important subset of several of the most common malignancies. The Company anticipates that breast cancer, colon cancer and prostate cancer will be the best clinical targets. The tumour selected as Neuren's first clinical target will depend on the specific properties of the lead antagonist molecule and on the results of *in vitro* and *in vivo* testing. The Company estimates that for breast cancer alone, approximately 400,000 eligible patients represent a potential market of US\$1 billion.



<sup>&</sup>lt;sup>6</sup> The CNS Outlook to 2007. Steven Birch. DataMonitor, 2002.

<sup>7</sup> The CNS Outlook to 2007. Steven Birch. DataMonitor, 2002.

<sup>&</sup>lt;sup>8</sup> The CNS Outlook to 2007. Steven Birch. DataMonitor, 2002.

# **SECTION 8**

# PEOPLE

Neuren's management brings tremendous depth and breadth of capabilities across the biopharmaceutical product development from basic research and discovery through preclinical and clinical development to market approval and commercialisation. In addition to scientific and technical capabilities, the Company's leadership includes people with substantial expertise and experience in corporate finance and operations, regulatory affairs, intellectual property, contract research, outsourcing and business development.

# **Board of Directors**



#### Dr Robin Congreve, LLM, PhD (Chairman)

Dr Congreve was for many years a partner in Russell McVeagh McKenzie Bartleet & Co specialising in taxation and business law. He was subsequently on the Boards of or chaired a number of public and private companies including NZ Railways Corporation, BNZ, Comalco NZ Ltd, Lion Nathan Ltd and TruTest Limited. He is a principal of Oceania & Eastern Group, a New Zealand private equity group which has provided private equity funding to both Neuren's predecessor companies, NeuronZ and EndocrinZ.

Robin was founding Chairman of the Auckland Medical School Foundation which led to the formation of NeuronZ within the University of Auckland and subsequently to the introduction of private equity into that company and EndocrinZ.



## Mr Tom Amos, B.Eng (Non-Executive Director)

Tom founded what became one of Australia's leading specialised technology consultancies, Amos Aked Swift (AAS), in 1983. Over the period until he stepped down in 2000 he built AAS into a highly successful, broad based consultancy and new venture business that now operates throughout Asia with offices in Australia, New Zealand and Indonesia.

Tom is a Principal of Wave Link Systems Pty Ltd, a Company that invests and assists in technology related areas. The Company has a portfolio of interests and investments spanning the range from start up to mature public Companies.

Since founding AAS he has been a Managing Partner, Managing Director, CEO and Director of a number of public and private companies.

Tom is a director of Amos Aked Swift (NZ) Limited, FlowCom Limited, Ambertech Limited and Macquarie Technology Ventures Pty Limited. Tom holds a degree in Electrical Engineering from the University of Sydney.



# Trevor Scott, BCom, FCA (PP), FNZIM, F Inst D, (Non-Executive Director)

Trevor is founder of T.D. Scott and Co., an accountancy and consulting firm, which he formed in 1988. Trevor is an experienced advisor to companies across a variety of industries. He serves on numerous corporate boards and is chairman of several, including Pacific Edge Biotechnology, Blis Technologies Ltd and Arthur Barnett Limited. He is also a director of Hirequip Limited, Scott Technology Limited, which are both listed on the New Zealand Stock Exchange. He is a member of the Board of the New Zealand Seed Fund and also chairs the Board of Otago Innovation Limited, which is the commercial arm of the University of Otago.





# Dr Douglas Wilson, MB, ChB, PhD (Director and Chief Medical Officer)

Dr Wilson was originally a medical academic with postgraduate experience in Auckland, London, Oxford and Walter and Eliza Hall Institute, Melbourne.

Doug then spent many years in the international pharmaceutical industry, firstly as Senior Vice-President for Boehringer Ingelheim USA. Doug was responsible for all drugs and clinical development and all interactions with the FDA. He then carried these responsibilities world-wide at Boehringer Ingelheim Head Office in Germany. He has overseen multiple drugs at all phases of development including bringing many drugs successfully to the market in the USA. He is now a consultant to the biotechnology sector.

# Mr David Clarke, BE(Hons), ME, BBS, MBA (Managing Director and Chief Executive Officer)

David has significant commercial experience, at Director and Managing Director level in Health, IT and Biotechnology and brings strong organisational skills to Neuren. David stepped into the New Zealand health sector in 1991 from a background in engineering, finance, marketing and sales with previous positions in the steel and food industries. For the five years prior to joining Neuren, David was Chief Executive Officer of South Auckland Health Ltd, one of the leading clinical and research centres and health providers in New Zealand. This centre specialises in providing tertiary

healthcare, teaching and research, has a staff of 4,000 people and revenue of \$500 million, centred around a 900-bed hospital – the largest acute surgical hospital in NZ/Australia. David significantly restructured the management and operations of the centre. During his term, he also arranged significant funding for the organisation, in particular overseas debt and other syndicated facilities, and undertook a \$200 million capital programme, successfully completed in 2002. David also worked extensively with Neuren's CSO in developing the research and academic capabilities of South Auckland Health.

In addition to his current role as Managing Director of Neuren, David is also a Director of two privately held companies. David is a Fellow of the New Zealand Institute of Management, a member of the Royal Society and a member of the NZ Institute of Directors.

# Executive Team - New Zealand

# Professor Peter Gluckman, MB, DSc, FRSNZ FRS (Chief Scientific Officer)

Professor Gluckman is one of New Zealand's most outstanding scientists. He is a Fellow of the Royal Society (London) of the Institute of Medicine of the National Academy of Science (USA) and holds a Rutherford Medal for Science and Technology by the Council of the Royal Society of New Zealand. He graduated with medals in medicine, pediatrics, obstetrics, psychiatry, therapeutics and community health, then went on to specialise further in pediatrics and endocrinology in Auckland and San Francisco, where he was an Assistant Professor in Pediatrics at UCSF. He established the Research Centre for Developmental Medicine and Biology of the University of Auckland, which was the forerunner to the Liggins Institute. He holds a University Chair in Pediatric and Perinatal Biology and was, Dean of Medicine and Health Sciences at the University of Auckland. He is Foundation Director of the Liggins Institute. He is an inventor with 27 patents and patent applications and the author of over 350 refereed papers and the author of over 150 scientific reviews.

# Mr Peter Bailey, BSc(Hons), ACA, FFM, (Chief Financial Officer)

Peter has extensive financial and corporate experience within New Zealand and the UK. Most recently he was with PricewaterhouseCoopers, Auckland and has previously worked for Grant Thornton, Bath, UK, where he acted as an adviser to the leading UK Motor Industry Group. Peter established the financial and reporting structures at Neuren and plays an integral role in ongoing corporate governance and management. Peter holds a BSc(Hons) in mathematics and is a member of the Institute of Chartered Accountants in England & Wales (ICAEW).



#### Dr Kathryn Jones, PhD, BSc(Hons), MComLaw(Hons), (Chief Business Officer)

Kathryn studied neuroscience at the University of Otago and completed an honours degree and a PhD for research on Alzheimer's Disease in 1997. Subsequently, she became involved with the NeuronZ project (within UniServices) while working for the Dean of Medicine at the University of Auckland. She has worked for biopharmaceutical companies since mid-2000 and has extensive experience in intellectual property management, patent prosecution, contract negotiation and management and business development in biopharmaceuticals and medical devices.

## Paulina Luczynska, MComLaw(Hons), (Intellectual Property Manager)

Paulina's specialisation is in intellectual property law. Her previous work experience includes work at one of Poland's top law firms specialising in various aspects of intellectual property law practice and, during her postgraduate degree, research assistantship at the Commercial Law Department of the University of Auckland. She has broad experience in various aspects of IP portfolio development and protection. Paulina has been with the Company since April 2002 and manages contractual, patent and trade-secret aspects of Neuren's portfolio in cooperation with Neuren's scientists and patent attorneys.

## Dr Greg Thomas, BSc(Hons), PhD, (Consultant)

Dr Thomas worked as a Research Fellow at Prince Henry's Institute for Medical Research (Melbourne), a scientist at the Centre for Reproduction Biology in Edinburgh. Subsequently, he moved to the Division of Neurophysiology, National Institute for Medical Research in London, where he investigated the use of small molecule peptide mimetics in the release of growth hormone. Greg has published over 50 papers and 50 abstracts in the field of neuroendocrinology. Greg joined Neuren Pharmaceuticals (formally NeuronZ Ltd) in July 2000 as the Team Leader of the Pharmacokinetics and Formulation Group. In 2002 he was promoted to Principal Scientist and joined the Executive Management Group at Neuren as the Science Manager. Greg holds a PhD in Reproductive Neuroendocrinology. Having recently moved to Perth, Western Australia, Greg is now employed as a Consultant to Neuren.

## Dr Frank Sieg, PhD, (Principal Scientist)

Dr Sieg directs *in vitro* and mechanism of action research at Neuren and is principally responsible for the process of screening and characterising Neuren's compounds. He gained previous scientific experience at Ruhr University, Bochum and Otto-von-Guericke University, Magdeburg in Germany including extensive experience with cellular neurological systems to study traumatic brain injury and the mechanism of action of therapeutic compounds. Frank holds a Master in Zoology and a PhD in Natural Sciences from the Free University of Berlin.

#### Associate Professor John Bass, PhD, DSc, FRSNZ, (Consultant)

John was originally trained in research into control of male reproduction at London University. He then worked for 30 years in the field of growth and metabolic endocrinology with particular relevance to farm animals, and growth and development of muscle. During his time in agricultural research as a research group leader for AgResearch Ltd he has managed a number of research units involved in animal behaviour, lactation physiology, production of therapeutic antibodies in milk, and hair and fibre growth. His own research has resulted in him being awarded a DSc from London University and election as a Fellow of the Royal Society of NZ.



# Executive Team – USA

# Lawrence Glass BA (Biology) (Executive Vice-President)

Lawrence is a manager and strategist with more than 25 years of experience in the life sciences industry. For the past several years, he has served as an independent consultant and part-time corporate officer for biomedical research and product development companies in oncology, neurosciences, medical devices and diagnostics, where he has been involved in planning and implementing preclinical R&D, clinical trials, financing and business development efforts. Previously, he was President and CEO of SRA Life Sciences, a 250-person, US\$25 million per year contract research organisation which was a subsidiary of a NYSE company until its acquisition by Virco (now part of Johnson &Johnson). SRA was the first for-profit laboratory to commercialise viral pharmacogenomics and phenotyping and played a key role in the development of a number of important anti-HIV drugs. Larry has extensive experience developing grant and contract revenue and collaborations with NIH and the Army Medical R&D Command. He is a biologist with graduate training in epidemiology and biostatistics. Larry leads Neuren's US operation.

#### Dr Jayson Dallas, MD, MBA (Consultant)

Dr Dallas is a physician and senior marketing executive with extensive experience in maximising revenue through strategic planning and execution of pharmaceutical marketing programmes. Jayson presently holds a senior marketing position with Novartis prior to which he has worked for Pfizer, Pharmacia and Roche. In these roles, he has been involved in leading product launch and life cycle management efforts in CNS, endocrinology & metabolic diseases, diabetic neuropathy, osteoporosis and women's health. Jayson is based in the US.

# Key Consultants

## Professor Margaret Brimble, MNZM, FRSNZ, FRACI, FNZIC, PhD (Medicinal Chemistry Consultant)

Professor Brimble holds the Chair of Organic and Medicinal Chemistry at The University of Auckland with previous appointments as Reader/Associate Professor at the University of Sydney, invited visiting Professor at the University of California, Berkeley and Lecturer at Massey University. She has extensive experience in organic synthesis and is an expert on the synthesis of complex biologically active molecules. She won the 2004 Novartis Chemistry Award for outstanding contributions in natural products synthesis and the development of synthetic methodology. She is a member of the International Union of Pure and Applied Chemistry (IUPAC) Committee on organic synthesis, is President-elect of the International Society of Heterocyclic Chemistry (ISHC) and a member of the Academy Council of the Royal Society of New Zealand. Margaret has published 137 international refereed papers and 10 reviews, and has given invited plenary lectures at over 25 international conferences. She was the Chair of the 14th International Conference on Organic Synthesis in 2002 and has received a number of scientific awards including the Royal Society of NZ Hamilton Prize, the NZIC Easterfield Medal and the Federation of Asian Chemical Societies Distinguished Chemist Award.

# Associate Professor Wayne Cutfield, MD (Senior Consultant)

Associate Professor Cutfield is Director of Endocrinology at Auckland Starship Hospital and an Associate Professor in Pediatrics at the University of Auckland. Wayne obtained his medical degree and pediatric qualification at the University of Auckland before training in pediatric endocrinology in Cincinnati. In addition to clinical work at the Starship Hospital, Wayne conducts both experimental and clinical research into aspects of growth and insulin resistance. He is widely regarded as an expert on insulin sensitivity and action in children.

#### Professor Michael Dragunow, PhD (Senior Consultant)

Professor Dragunow is a Professor of Pharmacology in the Department of Pharmacology, University of Auckland. He has extensive experience in Molecular and Neuropharmacology and has supervised more than 23 graduate students. He has published over 180 original papers, review and book chapters. Mike is an advisor to Neuren on biochemical mechanisms of neuronal injury and repair in Neurodegenerative diseases. His research involves developing cell culture models of the nervous system, using cell lines, to dissect out the biochemical mechanisms regulating processes such as nerve cell death, survival and repair. He is also founder and director of the High Content Screening Laboratory which uses the Discovery-1 Automated Fluorescence Microscope and Image Analysis Screening System to measure complex cellular information (from cell line models) at high through-put for molecular screening.



#### Professor Stewart Gilmour, PhD, (Chief Scientific Adviser - Growth and Metabolism)

Prior to taking this position with Neuren, Professor Gilmour was the Deputy Director of the Liggins Institute and Professor of Biomedical Sciences. Within the Faculty of Medicine and Health Sciences at Auckland University he led a research team focusing on intracellular signaling with a special interest in insulin-like growth factor, mechanism of action of insulin-like growth factor, regulation of cell cycles, proteomics and functional genomics. Previously, Stewart was the Head of the Department of Biochemistry at the Babraham Institute, Cambridge, UK where he gained an international reputation in the regulation of insulin-like growth factor gene expression. Prior to this, he was a group leader in the Beatson Institute for Cancer Research, Glasgow where he carried out pioneering work on the structural basis of transcriptional regulation in chromatin. Stewart holds a PhD in science from Glasgow University and has published over 150 peer-reviewed papers.

## Associate Professor Peter Lobie, MBBS, PhD, (Senior Consultant)

Associate Professor Lobie is a leader in GH analogs and signaling and applications of GH to oncology. His was the first to identify large numbers of new cellular targets for growth hormone in multiple mammalian tissues and to study the role of autocrine GH in detail. Peter is an Associate Professor and Associate Director of the Liggins Institute. Previously, he served as an Associate Professor at the Institute of Molecular and Cell Biology at the National University of Singapore. After obtaining his medical degree at the University of Queensland, Peter earned his PhD in Molecular Endocrinology at the Karolinska Institute in Sweden and was subsequently appointed to faculty at the Karolinska Institute. He is an author on more than 70 peer-reviewed publications.

# Scientific Advisory Board

The Company's Scientific Advisory Board includes a number of the best recognised experts in the Neuroprotection and Metabolism fields respectively.

#### Chair - Professor George Werther

(Murdoch Children's Research Institute, Melbourne, Victoria, Australia)

#### Professor David Dunger

(Department of Paediatrics, University of Cambridge, United Kingdom)

# Professor Stewart Gilmour

(Liggins Institute, University of Auckland, New Zealand)

#### Professor James Grotta

(Department of Neurology, University of Texas Medical School, Houston, Texas, USA)

## Professor Ole Isacson

(Department of Neurology, Harvard Medical School, Boston, Massachusetts, USA)

# **Professor Michael Waters**

(Institute for Molecular Bioscience, University of Queensland, Brisbane, Australia)

# **SECTION 9**

# INDEPENDENT SCIENCE REPORT

# aoris nova Pty Ltd

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28<sup>th</sup> October2004

The Directors, Neuren Pharmaceuticals Limited Level 2, 2-6 Park Avenue Grafton NEW ZEALAND

Dear Sirs,

Aoris Nova Pty Ltd advises on the commercialisation of technologies in life sciences.<sup>1</sup> We provide here our independent report for inclusion in the Prospectus issued by Neuren Pharmaceuticals Limited (Neuren) dated on or about November 15, 2004 for the issue of 37.5 million shares at AU\$0.40 per share to raise AU\$15 million.

Neuren was formed in 2004 by the merger of EndocrinZ Limited with NeuronZ Limited, both privatised companies of Auckland Uniservices Ltd, the commercial arm of the University of Auckland. Both previous companies were formed to exploit the technology developed in the Liggins Institute and the University of Auckland. Neuren has interest in drug development in the areas of neuroprotection and growth and metabolism, which are major areas of interest of the Liggins Institute. Although Neuren arose through the merger of two companies with separate interests they are in rapidly converging fields with a common interest in hormones and growth factors (in particular insulin-like growth factors) and peptides and small molecules associated with these systems. The strengths of the Company lie in its novel approaches to intractable diseases and linkages with major partner research and clinical centres enabling testing of their compounds and hypotheses.

The Company has novel products and intellectual property in five areas, of which four are in neuroprotection and one in growth and metabolism with a particular interest in growth hormone. It has a pipeline of potential products at different stages in preclinical development and with some compounds in or about to enter clinical trials.

The main portfolio of products is aimed at markets for neuroprotection including neurocognitive decline associated with coronary artery bypass grafts, stroke, traumatic brain injury, multiple sclerosis, Alzheimer's disease, Parkinson's disease and spinal cord repair. The Company will use coronary artery bypass surgery and the now recognised neurological sequelae as an initial area of clinical study as a model for other more complex neurological conditions. It has strong capability for in-house testing in complex animal models and development of drug candidates.

# Neuroprotection

Neurological disability is a major cause of morbidity and mortality. Most of the related acute or chronic clinical conditions are not treatable and neurological disability is a major health frontier. Although central

<sup>1</sup> www.aoris.com.au

or peripheral nervous tissue damage, resulting from injury or disease, may cause the immediate destruction of neurological tissue, the death of cells from prolonged apoptosis (programmed cell death) or delayed necrosis (tissue organisational degradation) can lead to further deterioration of function well after the initial insult. This delayed and progressive cell death presents an opportunity for intervention through neuroprotective therapies.

Brain injury and the subsequent nervous system deterioration are complex, and full neuroprotection requires methods to maintain and restore nervous system function. Within this complexity, a major distinction is made between acute injury such as stroke or traumatic brain injury, where the insult is precisely timed and the subsequent destruction of tissue occurs progressively; and chronic injury, such as in Alzheimer's disease, multiple sclerosis or epilepsy, where the aetiology and timing are difficult to establish and neuroprotection must be effective in the face of ongoing immunological or inflammatory disease. Therefore, although neuroprotection is a major facet of the treatment of these diseases involving ongoing destruction of the neurological tissue, each disease has a unique basis that needs to be considered in designing therapies. Products that are effective in acute diseases might not easily translate to complex chronic diseases. Similarly, therapies effective for central nervous system diseases may not readily apply to peripheral tissue diseases.

Although neurological disease covers a large number of clinically defined acute and chronic conditions, aspects of the underlying mechanisms of cell death are nevertheless common and neuroprotective drugs may be effective across many of these conditions. Accordingly many approaches are being tried to provide neuroprotection, ranging from small chemical entities found in screening through to gene therapy and cell therapy. They include anti-apoptotic agents, anti-inflammatory agents, anti-oxidants and cytokines. However, currently no product provides full neuroprotection, and this provides a significant market opportunity. It is an area of intense medical research.

# The market for neuroprotectants

The market for products that offer neuroprotection is large. World sales of current drugs, which have generally limited efficacy, are currently about US\$1.8 billion and projected to increase to US\$5.1 billion in 2005 and US\$11.5 billion by 2010. Events and diseases involving acute neuronal damage include:

- # Coronary artery bypass grafting is now a common operation performed on an estimated 800,000 patients worldwide each year. A major risk of coronary bypass surgery is the complication of changes in cognitive function, which occurs in 30% to 70% of patients post-surgery and ranges from minor to severe. The market for neuroprotective agents in this condition is estimated to be over US\$500 million. Neuren will use this application for proof of concept clinical studies and, if successful, products will be available to offer neuroprotection following surgery.
- # There are over a million hospitalised head injuries in the US each year. Long-term physical consequences and brain damage caused by traumatic brain injury occur in about 10% of survivors resulting in about 100,000 patients who have severe problems requiring care. While there are no neuroprotective therapies available, the market for all other products is about US\$2.5 billion and the cost to the community is estimated to be US\$25 billion. This is the subject of a collaborative research agreement between Neuren and the US Military.
- # Stroke is generally regarded as the sudden neurological paralysis resulting from altered blood flow to the brain. There are about 800,000 new cases of stroke in the US per year and it is a major cause of serious, long-term disability among adults and the third leading cause of death in developed countries. The incidence of hospital admissions due to stroke increased 18.6% between 1988 and 1997 and the total annual cost of stroke to the community is estimated to be US30 - 50 billion. The 2002 world market for stroke therapies, mostly anticoagulants and other treatments for re-establishing blood flow, was about US\$3.5 billion and expected to increase to US\$5 billion by 2005. Current treatments are



limited and aim to relieve symptoms and assist restoration of blood flow to the brain. There are no effective neuroprotective treatments currently available for the delayed neuronal death and apoptosis that continues for hours to days after restoration of blood flow. A number of compounds are in development using different approaches based on increased understanding of the mechanisms of stroke and a number of these compounds are in clinical trials.

Treatments for chronic neurological diseases comprise a large and more complex market. Some conditions such as Alzheimer's disease, which is estimated to cost the community US\$100 billion per annum, are practically untreatable with any current therapy. In other cases, such as multiple sclerosis, the available drugs offer only limited symptomatic relief. With this lack of treatments and large unmet need there is a substantial research effort worldwide to find effective therapeutics, including those offering neuroprotection, and there are many organisations with potential products in development. These include the largest pharmaceutical firms, small biotechnology companies as well as academic research centres.

# **Neuren's products**

Neuren has compounds in five product categories and two lead compounds addressing neuroprotection,  $Glypromate^{2}$  and NNZ-2566. The Company will undertake initial clinical trials in acute indications where there is a significant and accessible market and where the models of disease and protection are simpler than for the complex chronic diseases. Although the target for their neuroprotective products is the central nervous system these may also have application in the peripheral nervous system.

Neuren researchers have studied existing naturally occurring molecules providing protection against brain cell death following injury. They reasoned that such mechanisms must operate to protect an organ of such importance and identified Insulin-like Growth Factor-1 (IGF-1) as a key endogenous neuroprotective protein in the brain. IGF-1 is found widely in human tissues and is a powerful stimulator of proliferation and growth in many different cell types. In the brain, IGF-1 is involved in the growth of synapses and neurons and is an important mediator of neuronal growth and survival. Although IGF-1 is neuroprotective it is not suitable as a drug itself since it does not cross the blood-brain barrier. Neuren and its researchers have identified a small tripeptide cleavage product from the N-terminus of IGF-1 that retains potent neuroprotective activity, but unlike intact IGF-1 is able to enter the brain from the blood. This led to the development of the peptide Glypromate<sup>2</sup> as a Neuren lead compound for neuroprotection.

Glypromate<sup> $\supseteq$ </sup> exhibits a spectrum of beneficial effects in animal models. It inhibits apoptosis, delays necrosis, inhibits microglial activation and protects neurones, oligodendrocytes and astrocytes. The product offers substantial improvement after a continuous intravenous infusion. Subsequent research showed that chemical modification of Glypromate<sup> $\supseteq$ </sup> resulted in molecules with greater bioavailability, longer half-life and increased potency. Further modifications have made these compounds orally bioavailable and animal testing has suggested that these forms may be valuable drugs for treating chronic diseases.

The other Neuren drug candidates for neuroprotection are novel diketopiperazines, macrocyclics, and neuronal regeneration peptides having a range of properties appropriate for addressing the different requirements of neuroprotection and repair in the variety of conditions that represent Neuren's potential market. These are in earlier stages of development than Glypromate<sup> $\supseteq$ </sup>. We believe that these molecules are of real interest and are possible additional lead compounds for the Company. The diketopiperazine compounds are potent both as neuroprotectants and in promoting neurite formation and may be particularly useful in chronic conditions. A lead candidate has been identified and is in preclinical trials. The macrocyclic compounds are stable, modified cyclic forms of Glypromate<sup> $\supseteq$ </sup> with particular application in chronic disease and are also in preclinical trials.

The neuronal regeneration peptides are a family of novel peptides that were isolated by Neuren scientists from the media of cultured neonatal hippocampal slices and then developed using a rational drug design

and bioinformatics approach. They are from a unique gene family and assist neuronal repair mechanisms as well as neuroprotection and have the potential to stimulate a number of neuronal activities commensurate with repair, such as neuronal differentiation, proliferation and migration, neurogenesis and neurite and axonal outgrowth.

# Product development plan

The Company intends using the funds raised in this listing for the development of its products and by the end of 2006 plans to have several clinical trials underway. The costs of these trials and the prosecution and maintenance of the large patent portfolio are high and the funding is appropriate to undertake this full program. Most value accrues to drug candidates and the companies developing them when they successfully pass key milestones, in particular Phase II trials where proof of principle occurs and product efficacy in human subjects is tested. There will be three such trials during the funded period using Glypromate<sup> $\supseteq$ </sup> and NNZ-2566 for neuroprotection in the acute conditions resulting from coronary artery bypass surgery, traumatic brain surgery and stroke, and at least one study will be commenced in the field of chronic or sub-chronic neurological disease. The Phase I study for Glypromate is expected to be concluded prior to close of the fund raising and, at this time of writing this report, recruitment to all cohorts has been completed. Other compounds will enter preclinical studies during this time prior to clinical trials. However, there is risk in not reaching this stage and no guarantee that products will enter or successfully complete any Phase II trials. If less funding is available, fewer of the compounds or disease applications will be able to be tested.

Coronary artery bypass surgery was chosen as a major acute condition for the initial focus of clinical trials because it has a defined initiation point (when the heart is stopped) and cognitive tests before and after the trauma of surgery enable controlled monitoring of effects and intervention if required. During surgery the circulation is diverted and some injury can occur leading to cognitive impairment in up to 70% of patients. Neuren uses an animal model of global brain ischaemia to mimic the brain injury associated with coronary artery surgery and obtain preclinical data prior to a clinical program in patients having heart bypass or related surgery. There are no current, effective neuroprotective treatments approved for this indication and this is a valuable market for new products.

In addition to their importance in coronary artery bypass surgery the experimental and clinical findings will also be applicable to several other important diseases. These include acute diseases such as traumatic brain injury and stroke and provide an entry point for several major chronic diseases such as multiple sclerosis and Alzheimer's disease. This clinical program on coronary artery bypass surgery will be carried out through the Department of Cardiology, Auckland Hospital in conjunction with Duke University, USA, which has extensive experience and some success in such neuroprotection drug trials. Clinical studies in traumatic brain injury will be carried out in collaboration with the US military Walter Reed Army Institute of Research/Neurosciences and have already provided positive results in animal models of penetrating head injury. Pre-clinical and clinical studies in stroke and stroke rehabilitation are being carried out in conjunction with the University of Texas Medical School, USA.

# **Growth metabolism**

Formerly, EndocrinZ established a close contracted working relationship with the major pharmaceutical company Pfizer to test compounds and strategies and to co-develop new compounds. This has been of considerable value and provided recognition of the international standing of the research capability of Neuren as well as cash flow.

Growth hormone is a pivotal molecule essential for ordered structural and tissue growth, especially in childhood, but a number of other metabolic activities are also attributed to different parts of its structure. Growth hormone is now known to exist in different isoforms with properties that differ from the pituitary growth hormone normally commercially available and these have various fundamental roles in metabolism as well as growth. The Neuren researchers and their partners have manufactured and tested

forms of growth hormone and created analogues with properties related to these individual activities based on rational drug design principles.

Further, antagonists are being developed by the Company to interfere with the activity of growth hormone in the promotion of tumour growth. This program is still at the early discovery phase, but Neuren's researchers have identified a novel target molecule in breast cancer. This may be a new mechanism for controlling the growth of those tumours most frequently diagnosed, including breast, colon and prostate cancers.

Neuren has a particular interest in new compounds for patients with Metabolic Syndrome (also known as Insulin Resistance Syndrome or Syndrome X) and cardiovascular disease risk. The Company is developing growth hormone-derived products targeted at this area of growth hormone activity. Metabolic Syndrome is characterised by a group of metabolic risk factors including central obesity, blood fat disorders, increased blood pressure and glucose intolerance. Subjects have increased risk of coronary heart disease, stroke, peripheral vascular disease and Type II diabetes. The underlying causes are overweight/obesity, physical inactivity and genetic factors.

In our opinion the market for drug treatments for Metabolic Syndrome is very large and expanding and attractive for Neuren. In a recent study, the incidence of Metabolic Syndrome in the US was estimated at about 47 million people, and indications are that it will soon overtake cigarette smoking as the primary risk factor for cardiovascular disease. It is addressed now by drugs specific for each of the component conditions but requires novel products able to target the underlying causal mechanisms especially in the overweight and obese patients at increased risk.

Neuren will work with collaborators to develop lead compounds and this area fits with the expertise of the Company and of the Liggins Institute. The program is currently in the drug discovery phase. The growth hormone-related products are being tested in animal models and early partnering with other companies is anticipated for development and marketing. The Company has defined two products for specific testing and expects to have additional growth hormone analogues by 2006.

# **The Neuren Business**

Neuren and the Liggins Institute share infrastructure, including equipment, building and animal resources. Following the agreements with the previous companies EndocrinZ and NeuronZ, Neuren has a Research Agreement and a License Agreement with Auckland Uniservices Ltd, a wholly owned entity of the University of Auckland, to provide for the continuing relationship with the Liggins Institute and with other centres in the University in specific areas. The University is also a shareholder in Neuren. Through these agreements, Neuren contracts the services of the Liggins Institute and owns or has rights to all IP developed there in specific areas of neurology and endocrinology. In addition, the Company can contract University staff as consultants for the work on neuroscience, endocrinology and growth metabolism. The access to sophisticated animal models for the neurological and endocrine diseases being studied is particularly valuable.

The relationship with the Liggins Institute provides an important strategic and practical link with a leading research institute in New Zealand. If the relationships between Neuren and the Auckland Hospital and University discontinued, access to research facilities would slow and the development of particular lines of research for new products may even be prevented. However, the relationship is unlikely to affect the later stages of development of existing products and we believe the main sources of cash flow in the immediate future would be maintained. The legal agreements should prevent this separation in the next 3 years.



# Position of the Neuren technology in drug development

Neuren has a product portfolio and research capability that spans the early phases of drug development in areas of high market and clinical demand. The Company's approach to drug development is typical of academic spin out companies developing products from medical research. However, it is distinguished by having a well-defined and focussed product pipeline. Due to the inherent risks of drug development and the intense international competition, a company should ideally have high quality science with good linkages between the laboratory and clinical research community and with the pharmaceutical industry. It should also be able to capitalise on the high level research based drug discovery being carried out in the publicly funded medical research institutions. In our opinion Neuren has actively pursued these criteria and appears to be competitive in the specific interest areas of neuroprotection and growth and metabolism. Although this approach is relatively common, Neuren, via its collaborations, has developed these linkages and capability over many years and its personnel are highly respected by peers.

Drug development is inherently risky and there is no guarantee that products with drug-like properties able to capture major markets will be developed from these programs. There is a risk that other, better products may also emerge to do the same thing. Neuren is scientifically competent in the field and has high calibre people. This is expected to reduce these risks but will not eliminate them and the Company has yet to carry out extensive clinical trials. Drug development is normally carried out in the major centres in USA, Europe and Japan and the location of the Company in New Zealand may be seen as a disadvantage. However, we do not see that this is the case and believe that drug discovery is effective where there are high-level scientists and research. The Liggins Institute is very competitive and the people associated with Neuren enjoy a high standing internationally. This is further indicated by the contracted work with Pfizer.

The Company has an aggressive IP policy of patent filing in the US and in capturing new inventions as they are developed. It currently has 29 patent families with 19 issued patents covering the technologies assigned from its partners, including the Liggins Institute and its own internal development. The Company manages its large patent portfolio through internal staff and external attorneys who have close links with their US office and have the responsibility to ensure that IP standards are maintained in the Liggins Institute in overlapping areas as well as in the Company.

# People

Professor Peter Gluckman FRS was instrumental in establishing the Liggins Institute, where he is Director, and was the founding scientist of NeuronZ and EndocrinZ and now Neuren where he is Chief Scientific Officer. Professor Gluckman has led the development of the drug candidates in Neuren and is a recognised leader in developmental physiology, endocrinology and neuroprotection. He is an outstanding scientist with a prodigious publication and patent record and has provided the direction to bring the Company to this point. Despite his role in the establishment of the Company, the technology is now well embedded in Neuren and the University/Liggins Institute through the IP portfolio. The Company has a separate agreement with Professor Peter Gluckman and he holds shares and options in Neuren.

Through the agreement with Auckland Uniservices Limited, Neuren has access to teams of scientists in the Liggins Institute, the University of Auckland and associated hospitals providing expertise in the areas of interest. These scientists have wide international collaborations and reputations in their fields. This is a particular strength of the Company and potentially allows continuous development of products from the research into the clinic. For example, Professor Stewart Gilmour provides direction and connections for the growth metabolism aspects of the program and is an expert in IGF-1. Professor Margaret Brimble is an experienced and internationally recognised medicinal chemist at the University of Auckland and has a laboratory funded by Neuren to design and synthesise many of Neuren's small chemical entities. Professor Michael Dragunow in the Department of Neuropharmacology advises on the mechanisms of neurological disease and Associate Professor Peter Lobie is an expert in molecular biology and signal transduction, growth biology and cancer. Associate Professor Wayne Cutfield is recognised for his work in insulin sensitivity and growth in children.

Mr David Clarke as CEO is an experienced healthcare and IT company and public sector senior manager. The Company has extensive resources for drug development in-house and through the board and advisors. The Company is mature in having normally developed business functions and uses the Liggins Institute for personnel administration.

The Board of Directors includes leaders in business in New Zealand and representatives of the initial funding for Neuren. Dr Doug Wilson who serves as a Director of Neuren was previously Senior Vice President for Medical and Regulatory Affairs and Head of Corporate Medicine at Boehringer Ingelheim and has been involved in over ten New Drug Applications to the US FDA. The Scientific Advisory Board contains high profile and experienced people from world centres to advise on the research program.

# Interactions with other entities

Neuren has a relationship with Pfizer for product testing and the identification of new products and market leads. A contractual relationship was established earlier with Endocrinz and built on the recognised scientific and clinical expertise of the scientists in the company and the Endocrine Care Group of the Neuren and the Liggins Institute. Pfizer retains a significant shareholding in Neuren and the companies are undertaking further joint preclinical studies according to agreed protocols. Neuren expects that further agreements with major international partners will be arranged.

The Company has further contractual agreements with various suppliers including for the manufacture of clinical test materials to meet GMP standards, regulatory compliance and intellectual property advice.

The Company has negotiated an agreement with the US Military Walter Reed Army Base for research on methods of neuroprotection following traumatic brain injury. Under the US Government Cooperative Research and Development Agreement (CRADA) scheme the US Military will cover the costs of the research and then have access at cost and for a specified period to any product arising from the work. Neuren will retain the IP arising from the research.

Neuren has entered into an agreement with the University of Texas Medical Center, Houston, USA to codevelop novel restorative strategies for stroke recovery. This will include the use of 'cocktail' therapies of Neuren compounds in combination with compounds under development at the University of Texas. Both groups will also collaborate to jointly test the effects of longer-term neuroprotective and restorative treatments on recovery after stroke. Neuren has also entered into a Research Agreement with Metabolic Pharmaceuticals Ltd whereby Neuren will test Metabolic's compounds.

# Conclusions

Neuren will capitalise on its pharmaceutical portfolio and its linkages to the Liggins Institute and to other research centres to develop products in neuroprotection and metabolism. The Company has one lead compound in a Phase I trial and another compound about to enter clinical trials as well as others in preclinical development. It plans to start several Phase II trials in the next two years. These compounds will have application in many neurological diseases with unmet clinical need and large market demand. The competition in the area is intense, involving many different biotechnology and pharmaceutical companies and there is no guarantee that the lead compounds will have the required characteristics of successful drugs. The available resources may also restrict the development of other useful drugs in a reasonable time frame. Successful development of products will depend on strong scientific excellence and the Company has shown good capability to identify new compounds and to test them across animal models and in the clinic.

The Company has access to high quality technical and medical expertise and to facilities to conduct the research and business proposed. In our opinion the Company is competitive in the areas of neuroprotection and growth metabolism. It has a team of recognised scientists and clinicians with established international reputations and linkages for clinical advice and use of facilities with access to



animal models and patients for testing. It has a pipeline of products and new lines of research that are of interest to the pharmaceutical industry with whom Neuren already has good connections and experience in interacting with away from the main centres of development in Europe and US. The Company has an aggressive and comprehensive approach to IP management and a large IP portfolio.

# Disclaimer

This report is provided solely for inclusion in the prospectus issued by Neuren Pharmaceuticals Limited on or about 11<sup>th</sup> November 2004. All comments made in this report are based on information available to the consultants at the time including information from Neuren and are made in good faith. Aoris Nova has prepared this independent report according to the Policy Statements and Practice Notes from the Australian Securities and Investments Commission (ASIC) and the Listing Rules of the Australian Stock Exchange Limited (ASX). Aoris Nova holds an Investment Advisor's license (Number 256684) from ASIC to prepare such reports. This report does not make any recommendations regarding purchase of shares in Neuren Pharmaceuticals Limited.

In our analysis we have assessed the technology, the business strategy, the markets and considered their ability to access and satisfy these markets in a reasonable time. We have interviewed the management and scientists in the Company, reviewed information from the Company and from public sources and visited the facilities.

There are risks in bringing Neuren's technologies to market and generate revenues. Aoris Nova does not guarantee that the actions noted in this report will actually occur because of possible changes in the markets and business and other environment, and actions by Neuren, which occur over time subsequent to this report. Aoris Nova has not audited any financial forecasts of Neuren and has not analysed the legal status of agreements Neuren has entered into. However, we have not identified anything that would indicate that this is materially misstated. A draft report was issued to the due diligence committee of Neuren to confirm factual accuracy and changes were made in the final report to reflect these.

We have given our written consent to the issue of this report in the Prospectus in the form and context in which it appears. We have been involved only in the preparation of this Report and not in any other part of this Prospectus, and specifically disclaim liability to any person in respect of any statements included elsewhere in this Prospectus. We have not, other than as set out above, been involved in the preparation of, or authorised or caused the issue of, this Prospectus.

Aoris Nova has acted independently in preparing this report and neither its directors nor staff has any pecuniary or other interest in Neuren Pty Limited, or their associates, that could reasonably be regarded as affecting its ability to give an unbiased opinion. Aoris Nova will receive normal professional fees for the preparation of this report. With the exception of these fees, it will not receive any other benefits, either directly or indirectly, from the preparation of the report.

Yours faithfully,

AORIS NOVA PTY LTD

Kelvin Hopper PhD Managing Director

Jawes

Joan Dawes DPhil Senior Consultant

# **SECTION 10**

# INTELLECTUAL PROPERTY REPORT

# Fliesler Meyer IIp

#### INTELLECTUAL PROPERTY LAW

Four Embarcadero Center • Fourth Floor San Francisco • California 94111-4156 Telephone 415.362.3800 Facsimile 415/362.2928 Internet www.fdml.com Martin C. Fliesler Sheldon R. Meyer Thomas A. Ward *OF Counsel* Charles H. Jew D. Benjamin Borson, Ph.D. JEFFREY R. KURIN DANIEL J. BURNS MICHAEL ROBBINS JOSEPH P. O'MALLEY MELISSA L. BASCH BRYON T. WASSEMAN SUVASHIS BHATTACHARYA J. STEVEN SVOBODA PAUL A. DURDIK

Patent Agents Karl F. Kenna T. David Xue, Ph.D. Anthony G. Criag, Ph.D.

D. Benjamin Borson, Ph.D., J.D. dbb@fdml.com

October 28, 2004

Board of Directors Neuren Pharmaceuticals Ltd. Level 3, 2-6 Park Avenue Grafton, Auckland, 1031 New Zealand

Re: Neuren Pharmaceuticals Ltd. Patent Report

Dear Directors:

This Patent Report ("Report") is provided for inclusion in a Prospectus to be issued by Neuren Pharmaceuticals Ltd. ("Neuren"). The information in this Report is to provide descriptions of all patent matters that our Firm handles for Neuren. Additionally, this Report contains information relating to some other patents and patent applications of Neuren. Although the list is inclusive, details of the subject matter of each application and patent are necessarily limited in scope. The status of the matters described herein is correct to the best of our knowledge as of the date above. Fliesler Meyer LLP has been paid for our services in preparation of this Report.

Fliesler Meyer LLP has represented Neuren, Neuronz and Endocrinz (collectively, "Neuren") from May 2002. Since that time, we have provided services for patent drafting and prosecution, have provided certain opinions about non-infringement and have been paid by Neuren for those services. For patents issued prior to May 2002, we have been primarily responsible for carrying out Neuren's instructions for maintenance of U.S. and foreign patents. For applications filed prior to May 2002, we have been primarily responsible for prosecuting U.S. cases and coordinating foreign prosecution of Neuren's patent applications. For applications filed after May 2002, we have been involved in drafting U.S. and International applications for Neuronz, Endocrinz and Neuren. This Report contains description of certain patent applications with which we have not been involved. However, those descriptions have been represented to us by Neuren to be accurate.

Neuren was formed on June 2, 2004 by a change of name from Endocrinz Ltd., a New Zealand company incorporated on 17 December 2001 ("Endocrinz") to Neuren Pharmaceuticals Ltd. Previous to the change of name, Neuronz Ltd., a New Zealand Company ("Neuronz") sold all of its intellectual property assets to Endocrinz Ltd. Therefore, this report includes all patent matters of Neuronz, Endocrinz and Neuren. The individual matters will be referred to by the "client code" that our firm uses for each matter. The code for Neuronz is "NRNZ," the code for Endocrinz is "ERNZ" and the code for Neuren is "NEUN." However, the differences in client code are for our internal purposes only and do not reflect any differences in ownership of the patents or patent applications.

#### **Fliesler Meyer LLP**

Fliesler Meyer LLP is a United States law firm based in San Francisco specializing in intellectual property matters, including patents, trademarks, trade secrets, copyrights, intellectual property licensing and agreements and intellectual property litigation. The firm has been in existence for nearly 20 years. All of the Patent Attorneys of Fliesler Meyer LLP are graduates of accredited law schools, have passed the



Board of Directors Neuren Pharmaceuticals Ltd. Page 2

October 28, 2004

California State Bar Exam and have passed the United States Patent and Trademark Office (USPTO) Registration Examination. All of the Patent Agents of Fliesler Meyer LLP have passed the USPTO Registration Examination. Fliesler Meyer LLP handles patent matters relating to biotechnology, chemistry, medical devices, electronics, computer software, consumer products and other subject areas.

The drafter of this Report is D. Benjamin Borson, Ph.D., J.D. Dr. Borson is Of Counsel at Fliesler Meyer LLP and has been with the Firm for 7 years, practicing intellectual property law relating to pharmaceuticals, genetics, medical devices, physiology, biochemistry, organic chemistry and other subject areas. He is a member in good standing of the State Bar of California and is licensed to practice before the United States Patent and Trademark Office. His practice includes preparation and prosecution of patents and trademarks, preparation of opinions relating to patentability, patent validity and patent infringement and evaluation of intellectual property portfolios. Dr. Borson also is a frequent author and lecturer in intellectual property law. Prior to entering the Law, Dr. Borson was a member of the faculty of the University of California, San Francisco, carried out a biomedical research program, authored numerous scientific publications and received numerous research grants.

#### **Background of Intellectual Property**

Intellectual property encompasses patents, trademarks, trade secrets, copyright, mask works, plant varieties and designs. In many countries, patents, plant varieties, mask works and designs are created by statute, and in most countries throughout the world, they are granted by official government agencies and are enforceable in courts. Trade secrets, trademarks and copyright are protected under both statutory and common law.

The information contained in this Report is accurate as of the date of this letter. However, we cannot guarantee that all of the patents described herein are free from challenge. Throughout the world, a patent may be challenged for one or more reasons in litigation. In the event that a challenge is successful, one or more claims of a patent may be held invalid or unenforceable, and in some jurisdictions, the scope of a claim can be reinterpreted. Consideration of litigation and likelihood that a particular patent or claim will be held to be valid or invalid is beyond the scope of this Report.

#### **Patent Rights**

A patent grants the patentee a right to exclude others from making, using, selling, or offering for sale, the patented invention for a limited period of time ("Patent Term"). Patent Term is typically 20 years from the filing date of the application. In some countries, including the United States, a patent also grants the patentee a right to exclude others from importing a product incorporating or made using a patented invention. In general, the scope of a patent is defined by claims, which defines of what the patentee holds as the scope of the invention. Claims may be "Independent" that is, a complete statement of the subject matter of the claim. "Dependent" claims are separate from Independent claims but include the subject matter of an Independent claim plus one or more additional limitations.

Patents are granted on a country-by country basis, with each country having patent laws that may differ from those of other countries in certain aspects. In general, a patent may be granted for an invention that has 4 fundamental criteria common to all countries, the invention must be: (1) new (novel); (2) non-obvious (or have an "inventive step"); (3) statutory (legal); and (4) have practical or potential industrial uses in commerce.

#### **Ownership of Patent Rights**

As with other types of property rights, ownership of patents and patent applications can be transferred between entities. In most countries, he original owner of the patent or patent application is an "Applicant" who may be a person, corporation or other entity. In the United States, the initial ownership



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of a patent or application is in the "Inventors" the persons who created the invention. Legal rights in patents and applications are transferred using assignments, licenses and/or deeds. The scope of the rights transferred depends upon the intents of the Parties to the transaction. Typically, an assignment transfers all legal rights in an invention. These rights include the rights to exclude others from making, using selling, offering to sell, and importing a product embodying the invention. Additionally, an assignment also confers the right to sue, and a right to be sued. A license may be a transfer of a limited number of rights from the patent owner to the licensee in exchange for certain consideration, such as royalty payments. A license may also include the right to sue and be sued.

In the United States, an Assignment, Deed or other document memorializing a transfer of legal rights may be recorded with the USPTO. Recording an Assignment protects the Assignee from any claims filed after the Recordation, by putting the public on "Notice" of the transfer. In most other countries, Assignments are not recorded, but are available to show ownership. Some patent offices require that an Applicant provide an assignment entitling the Applicant to pursue the patent application. Certain rights in patents and patent applications owned by Neuronz have been assigned to Neuren by way of a Corporate to Corporate Assignment executed as of 21 May 2004, with a signature date of 15 October 2004. Other rights in patents and patent applications have been assigned directly to Neuren by the Inventors. Unless noted otherwise in this Report, all right, title and interest in these patents and patent applications is held by Neuren.

In addition to ownership, a patent may be licensed from the owner to a licensee. In some of the cases described in this report, Neuren's interest is an exclusive, royalty bearing, worldwide license from Auckland UniServices Ltd. ("UniServices"). A License Agreement was executed between Auckland UniServices and Endocrinz, dated 5 March 2002 and was amended 2 October 2002, by which Endocrinz acquired rights to certain UniServices' patents and patent applications. An Addendum to the License Agreement executed effective as of 2 June 2004 and signed on 15 October 2004, Neuren has acquired all of the rights to those patents and applications previously held by Endocrinz. Those patent applications and patents are specifically described as assigned to Auckland UniServices Ltd. and licensed to Neuren. Other patent applicants have been assigned to Neuren directly from the Inventors.

#### **Contents of a Patent**

A patent application consists of a written description of the invention (specification) including a background, summary and detailed description. Figures may also be included if they are useful in describing features of the invention. A patent also includes claims, which are legal statements of the scope of the protection sought. The specification must contain a description that discloses all of the subject matter to be claimed in a way that puts the public in possession of the invention, and allow the public to make and use the invention once the patent expires.

# **Types of Patents**

In many countries, a first filing may be a "Provisional Patent Application," which provides a priority date but does not begin the 20-year patent term. A Provisional Patent Application does not automatically mature into a true patent application ("Utility Patent Application"), but a Utility Patent Application may be filed that claims priority to the Provisional Application and thus can take advantage of the earlier filing date of the Provisional Patent Application. Thus, a Provisional Application is now a widely used way of protecting an invention at the early stages of the invention's life cycle. A Utility Patent Application is intended to mature into a utility patent, and includes all of the contents described above, but also may include additional disclosure not present in the provisional application. Finally, a utility application may claim priority to more than one provisional application filed within the year prior to filing the utility application.



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#### Patent Families

"Patent Families" reflect development of inventions over time and include generally common subject matter. A patent may be a "Parent," a "Divisional," a "Continuation," or a "Continuation-in-Part (CIP)." A Parent application is a first-filed utility application that contains a disclosure and may contain claims to more than a single invention. In the United States, a "Restriction Requirement" may be issued by the USPTO to require an Applicant to limit the scope of the claims in the application to a single invention. Claims that are withdrawn may be filed in a Divisional application. In the PCT and much of the rest of the world, a "Unity of Invention" standard is often applied, requiring the Applicant to limit the claims to a single inventive concept, and often to a single independent claim. A Divisional patent is an application that claims priority to an earlier application having an identical specification, but having different claims, drawn to a different invention. A Continuation application has the identical specification as an earlier-filed application but contains claims not filed with the original application, so long as those claims are supported by the specification and/or drawings. A CIP application contains some original subject matter and some "New Matter," not present in the original application. New matter may be either (1) newly added material or (2) matter deleted from the earlier application. A CIP application may therefore have multiple priority dates. Generally, a CIP claiming originally filed subject matter will have an expiration date 20 years from the filing date of the originally filed utility application. However, a CIP claiming New Matter will generally expire 20 years after the filing date of the CIP application.

#### **International Patenting**

A patent application may be filed in numerous countries throughout the world. The World Intellectual Property Organization ("WIPO") provides mechanisms by which inventions may be protected. The Patent Cooperation Treaty ("PCT") is a mechanism that provides that an Applicant can file a single patent application in an approved language in one office. The PCT International Application can then be evaluated and a search of prior art performed and a Search Report prepared. An International Examination may be carried out to provide an initial evaluation of the likelihood that a patent will issue. The PCT process also provides for priority claims to earlier application can then be filed in one or more countries that are members of the PCT. However, one can wait until 31 months to file a National Phase Application in certain countries, including Australia and Europe. Once filed in the National patent offices, each office will examine the application's claims and apply its own criteria of patentability. Moreover, there are "Regional Patent" proceedings, called "Regional Phase", such as for Europe, Africa, and Asia. Regional Patent Offices apply patentability criteria common to all countries in the Region, and when a patent grants on a Regional application, the patent may be validated in one or more countries in that Region.

Certain countries are not members of the PCT, but are members of the Paris Convention, which permits claiming priority to one or more patent applications filed within the previous year. Also, it is possible to file a National Phase application directly, without using the PCT. Direct filings can be used when it is desirable to have an application prosecuted rapidly. Most major industrialized countries and those countries desiring to industrialize are members of WIPO.

#### Criteria for Obtaining a Patent

In each country, the claims of the patent will be examined for the four criteria listed above to determine that the invention is new, not obvious (or has an inventive step), is useful and is statutory. Additionally, in many countries, the specification will be examined to see if it supports the scope of the claims adequately ("Substantive Examination"). In general, a patentee is given rights to a patent in exchange for a full disclosure of the invention and how to make and use the invention. Thus, upon expiry of the patent, the public can take advantage of the teachings of the patent in its own business. Substantive Examination can be very rigorous (as in the Australia, New Zealand, United States, Europe, Japan, Taiwan and many other countries) or may be "Pro Forma" as in certain countries not having the independent



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resources to examine patents carefully. Once the patent office is satisfied that the application meets all criteria for patentability, the patent is "Granted" or is "Issued." A grant fee will be due, and in countries having different languages, translations of the patent will be prepared at additional cost to the patentee.

Statutory subject matter permitted may differ between countries. For example, in the United States, methods of teating animals including humans are patentable. However, in Europe and several other areas, patenting methods of treating animals or humans is not permitted. In such areas, claims may be drawn to methods of manufacture of compositions suitable for treating, and therefore may be a suitable alternative to claims drawn directly to uses of compositions for treating a disease.

Additionally, different countries have different criteria for determining what is an "enabled" claim or one that meets "written description" requirements. In the United States, chemicals must have some structure disclosed, with or without some functional description. In other countries, a patent claim may issue based primarily on functional properties of the chemicals. Details of these differences are beyond the scope of this Report.

Examination of a patent application is called "Prosecution." Examination of the application by a patent examiner results in the preparation of an "Office Action" including a finding about patentability of the claims or other features of an application or prior art. Rarely, a first Office Action includes an allowance of claims and the issuance of a patent. More commonly, the examiner submits an Office Action by providing narrowed claims, arguments and/or information to rebut the rejections. The Examiner may then reevaluate the application and then can either accept the amendments and submit a "Notice of Allowance" or maintain a rejection. In the United States, the examiner may issue a "Final Rejection" requiring the filing of a "Request for Continued Examination" or "RCE." Upon receipt of the RCE, the finality of the rejection can be reversed and prosecution can continue.

#### Patent Term

A PCT International Application expires with the deadline for filing National Phase Applications. For most countries, that is 30 months after the date for which priority is claimed (either Provisional or prior Utility Application). For Europe, Australia and New Zealand, the National Phase deadline is 31 months after the earliest priority date. For purposes of this Report, the "Expiration Date" of a PCT International Application will be the expiration date of any National Phase application based on that PCT Application. Where appropriate, the National Phase deadline of 30 months is indicated.

Once issued, a patent has a fixed term, and in most countries of the world, that term is 20 years from the earliest filing date of a utility patent application that discloses the claimed subject matter ("Effective Filing Date"). For an International Application, the date the application was filed, the "Actual Filing Date," begins the 20-year term, even if the International Application claims priority to an earlier provisional application. After the actual filing date but before the issue date, a patent application is considered to be "pending." In most countries, a pending patent application has some aspects of property, but full property rights are available only after the patent has issued and is kept in force.

For a family of related patents whose specifications are the same, all patents will expire on the same date. U.S. Continuations and Divisions will expire on the same date as a Parent, unless there is PTA or PTR (see below) that increases the term. For U.S. Continuations having claims that are not patentably distinct over the claims of a prior Parent or Continuation, a "Terminal Disclaimer" may be filed to overcome a type of obviousness rejection. A Terminal Disclaimer asserts that the patent will expire upon expiration of the prior patent, thereby limiting the term of the protection to the term of the prior patent or application upon which the Terminal Disclaimer is based.



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In the United States, the term of a patent is subject to "Patent Term Adjustment," ("PTA"), in which excessive delays by the Patent Office can add term to a patent when it issues. Therefore, the expiration date of a U.S. Patent may be later than 20 years from the effective filing date.

Additionally, for inventions in biotechnology, pharmaceutical, medical devices and other inventions requiring approval by a governmental regulatory agency (e.g., such as the US Food and Drug Administration; "FDA"), the lengthy delays in approval may shorten the effective life of a patent. Therefore, in certain countries (including the United States), the term of a patent may be extended ("Patent Term Restoration" or "PTR") to recover at least some of the time lost in the regulatory process.

## **Maintenance and Enforcement of Patent Rights**

To enforce patent rights, a patent must be maintained by payment of fees to the granting agency. To keep a patent application or patent in force, fees must be paid to the country in which the patent has issued or is pending. In most countries, these fees are due annually ("Annuity Fees" or "Maintenance Fees"). In the United States, maintenance fees are due only after the patent issues, and then only three are due, at 3  $\frac{1}{2}$  years (or 4 years, with additional fee), 7  $\frac{1}{2}$  years (8 years with additional fee), and 11  $\frac{1}{2}$  years (12 years with additional fee). If maintenance fees or annuity fees are not paid, the patent lapses. In many countries, a lapsed patent may be revived, if revival is accomplished within a fixed time period.

A valid patent may be asserted against an accused infringer to either (1) stop the infringing activity, (2) to recover money damages, or (3) combinations of both. Typically, such actions are carried out in a court. In certain countries, validity of a patent may be challenged in the patent office or through another agency of the government.

#### **Review of Neuren's Patent Estate**

Neuren's patent estate includes patents and application filed on behalf of Neuronz, Endocrinz, and Neuren. Each of these estates will be described below.

Neuronz' patent estate generally encompasses compounds, compositions and methods for treating neurodegenerative conditions associated with chronic diseases (e.g., Alzheimer's disease, Parkinson's disease) or acute disorders (e.g., hypoxia, ischemia and trauma). Many of Neuronz' patents and applications relate to the tripeptide, Gly-Pro-Glu (GPE). Other compounds include derivatives of GPE, macrocyclic GPE analogs, diketopiperazine molecules and neural regeneration peptides (NRPs).

Endocrinz' patent estate generally encompasses compounds, compositions and methods for treating abnormalities of metabolism, blood pressure and the endocrine system (hormone regulated functions).

Neuren's patent estate encompasses recently filed applications that claim priority to either a Neuronz or an Endocrinz application. All future filings will be in the name of Neuren.

For each of the following inventions, we are providing the title, priority information, status and countries in which the patents have been granted or are pending, general description of the claim scope, rationale for the application and any substantive action to be taken. Those cases listed under Neuronz will be listed first, followed by those listed under Endocrinz and then that listed under Neuren.



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#### I. Neuronz Ltd.

By virtue of the sale of all assets of Neuronz to Endocrinz, the name change to Neuren, and the execution of the Corporate to Corporate Assignment described above, Neuronz' interests in the entire portfolio are now in the name of Neuren. The Corporate-to-Corporate Assignment and other relevant assignments will be recorded with the relevant official agencies to notify the public about the ownership of each patent and/or application.

# 1. New Peptide Antagonists at Glutamate and NMDA Receptors

Our File Series No:	NRNZ 01001
Filing Date:	16 May 1994 (PCT/SE94/00454)
Priority Date:	14 May 1993 (SE No: 9301667)
Expiration Date:	16 May 2014

Countri es in which Patents have Granted:

Europe:	Patent No: Patent Application No: Grant Date: Expiration Date:	0697866 9491640.2 20 August 2003 16 May 2014
	Patent validated in:	
	Germany:	Patent No: DE 694 33 058 T2 (2004.06.03)
	Denmark:	Patent No: DK/EP 0697886 T3
	Spain:	Patent No: 069866
	France:	Patent No: 069866
	Great Britain:	Patent No: 069866
	Greece:	Patent No: 3046594
	Italy:	Patent No: 069866
	Sweden:	Patent No: 069866
	Status:	Annuity fees paid 16 May 2004
United States:	Patent No:	5,804,550
	Issued:	8 September 1998
	Expiration Date:	16 May 2014. Date subject to PTR.
	Status:	Maintenance fee paid 8 March 2002
	Our File No:	NRNZ 01001 US0

Claims: The claims generally cover the use of glutamic acid-terminating peptide that is a glutamate receptor antagonist or an NMDA receptor antagonist, for the manufacture of a medicament to inhibit effects of glutamate on glutamate-receptor-controlled cells or NMDA-receptor-controlled cells. These peptides are used for treatment of acute or chronic disorder of the central nervous system, including hypoxic, ischemic or metabolic brain disorder, stroke, hypoglycaemia, traumatic injury, radiation-induced injury or inflammatory injury to the brain, chronic degenerative state or for treatment of children during the perinatal period and infancy.

Dependent claims cover the use of such peptides on neuronal cells and glial cells, and the specific peptides GnRH, (1-37)GRF and C-peptide of insulin, (1-3) IGF-1 or Gly-Pro-Glu (GPE). Other dependent claims to systemic administration or local administration to the brain.

Rationale: The agents claimed in these patents are neuroprotective and may be useful in treating nerve damage caused by a variety of diseases and injuries.



Board of Directors October 28, 2004 Page 8 Neuren Pharmaceuticals Ltd. Countries in which Applications are Pending: Canada: Application No: 2,162,924 Status: Pending, next annuity fee due 16 May 2005 Our File No: NRNZ 01001 CA0 Application No: 524705/1994 Japan: Pending, annuity fee paid 16 May 2004. Status: Awaiting first Office Action Our File No: NRNZ 01001 JP0 United States: 10/087,011 Application No: Status: Pending. Response to be filed. Our File No: NRNZ 1001 US2

#### 2. **Composition and Methods to Improve Neural Outcome**

Our File Series No:	NRNZ 01002
Filing Date:	20 December 1994 (PCT/NZ94/00143)
Priority Date:	23 December 1993 (NZ No: 250572)
	14 March 1994 (NZ No: 260091
	22 July 1994 (NZ No: 264070)
Expiration Date:	20 December 2014

Countries in which Applications are Pending:

Europe:	Application No: Status: Our File No:	95904702.8 Pending, annuity fee paid 9 September 2004 NRNZ 01002 EP0
Canada:	Application No: Status: Our File No:	2,178,711 Pending, maintenance fee paid 5 July 2004 NRNZ 01002 CA0
China:	Application No: Status: Our File No:	94 1 95037.9 Pending NRNZ 01002 CN0
Japan:	Application No: Status: Our File No:	517338/95 Pending NRNZ 01002 JP0

Countries in which Patents have Granted:

Australia:	Patent No: Issued:	700,838 29 April 1999
	Expiration Date:	20 December 2014
	Status:	Granted:
		Maintenance fee paid 15 December 2003
	Our File No:	NRNZ 01002 AU0



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New Zealand:	Patent No: Issued: Expiration Date: Status: Our File No:	<ul> <li>330,758</li> <li>7 September 2000</li> <li>20 December 2014</li> <li>Granted: maintenance fee due 20 December 2004</li> <li>NRNZ 01002 NZ1</li> </ul>
	Our Flic No.	

Claims. The Australian claims generally encompass methods for prevention or inhibition of cell death in neural cells of a mammal, using a peptide selected from the group of (a) the tripeptide Gly-Pro-Glu, (b) the dipeptide Gly-Pro, and (c) the dipeptide Pro-Glu. Dependent claims encompass treating neural injury, neural disease. Other dependent claims to pre-treatment using a peptide or treatment during an elective procedure. Routes of administration include direct administration to neural cells, a shunt into the ventricle, cerebrospinal fluid, intravenous, oral, rectal, nasal, subcutaneous, inhalation, intraperitoneal, intramuscular. Claims also encompass protection of neural cells and glial cells.

United States:	Title:	Methods to Improve Neural Outcome
	Patent No:	6,187,906
	Filing Date:	15 June 1999: CIP
	Issued:	13 February 2001
	Expiration Date:	11 August 2017: This date is subject to PTR.
	Status:	Maintenance fee paid 13 August 2004
	Our File No:	NRNZ 1002 US2

Claims: The claims of this patent generally encompass methods for protecting dopaminergic neurons of a mammal against death resulting from Parkinson's disease using Gly-Pro-Glu (GPE). Dependent claims encompass administration of GPE directly to dopaminergic neurons, to the brain, cerebrospinal fluid or ventricle, or systemically, via intravenous, oral, rectal, nasal, subcutaneous, inhalation, interperitoneal or intramuscular routes.

Rationale: The applications in this series focus on GPE ((1-3) IGF-1) and dipeptides of GPE. These agents may be useful for treating nerve damage caused by a variety of diseases and injuries.

<b>United States:</b>	Title:	Methods to Improve Neural Outcome
	Patent Application No:	09/866,536
	Filing Date:	May 25, 2001: CIP
	Expiration Date:	August 11, 2017: This date is subject to PTR.
	Status:	Allowed: Issue Fee Paid January 26, 2004; expected to issue within several months.
	Our File No:	NRNZ 1002 US3

Claims: The claims of this patent generally encompass methods of treating functional symptoms of Parkinson's disease using GPE. Functional symptoms of Parkinson's disease include tremor at rest, muscular rigidity, slowness of movement, slowness of movement initiation, slowness of movement execution, or mask-like appearance to the face. Dependent claims encompass administration of GPE via intravenous, oral, rectal, nasal, subcutaneous, inhalation, intraperitoneal or intramuscular routes. Dependent claims also encompass treating neurons in the substantia nigra, a portion of the brain whose function is deficient in Parkinson's disease.

Rationale: This patent demonstrates that GPE is effective in restoring function in animals having nerve damage, and that GPE treatment may have useful functional consequences.



# Fliesler Meyer LLP

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**United States:** Title: Use of GPE to Protect Glial Calls or Non-Dopaminergic Cells From Death From Neural Injury or Disease Patent No: 6,780,848 Issued: 24 August 2004 Filed: 20 July 2001 Expiration Date: 20 December 2014: Petition for PTA filed to adjust the term to 27 April 2015. Date subject to PTR. Status: Maintenance fee due 24 February 2008 Our File No: NRNZ 1002 US4

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Claims: The claims of this patent encompass methods for protecting glial cells or nondopaminergic neural cells against death from neural injury or disease using a peptide selected from the group consisting of (a) Gly-Pro-Glu, (b) Gly-Pro, and (c) Pro-Glu. Dependent claims encompass electrophoretic administration of GPE, routes of administration via the maternal circulation, cerebral parenchyma, cerebral ventricle, intravenous, oral, rectal, nasal, subcutaneous, inhalation, intraperitoneal and intramuscular. Other dependent claims encompass treating injuries caused by cardiac injury, brain surgery, parturition, hypoxia, ischemia, stroke or cardiac bypass surgery.

Rationale: This patent claims the use of GPE as a neuroprotective agent potentially useful in treating patients undergoing elective surgery (e.g., coronary artery graft bypass surgery) or subjects having trauma resulting in hypoxia of the central nervous system.

## 3. Regulation of Neural Enzymes

Our File Series No:	NRNZ 01003
Filing Date:	6 October 1997 (PCT/NZ97/00132)
Priority Date:	6 October 1996 (NZ Application Nos: 299511, 299512, 299513)
Expiration Date:	6 October 2017

Countries in which Patent Applications are Pending:

Canada:	Application No: Status: Our File No:	2,267,523 Pending, annuity fee paid 24 September 2004 NRNZ 01003 CA0
Europe:	Application No: Status:	97945108.5 Pending, maintenance fee paid 22 September 2004
	Our File No:	NRNZ 01003 EP0
Japan:	Application No: Status: Our File No:	516411/98 Pending: examination requested 1 October 2004 NRNZ 01003 JP0

Countries in which Patents have Granted:

Australia:	Patent No:	743,412
	Issued:	19 November 2001
	Expiration Date:	6 October 2017
	Status:	Granted:
		Maintenance fee paid 23 September 2004
	Our File No:	NRNZ 01003 AU0



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New Zealand:	Patent No: Issued:	335,544 17 December 2001
	Expiration Date:	6 October 2017
	Status:	Granted: Instructed foreign associate to pay maintenance fee 17 September 2004
	Our File No:	NRNZ 01003 NZ1

Claims: This patent's claims encompass methods for treating patients having a condition in which in increase in a neural enzyme, ChAT, NOS or GAD is desirable, using GPE or an analog thereof. Increasing ChAT is useful for treating motor neuron disease, Alzheimer's disease, muscular dystrophy, peripheral neuropathies, autonomic neuropathies, memory loss and neurodegeneration due to aging. Increasing GAD is useful for treating postasphyxial seizures, convulsive disorders, neurodegenerative diseases and hypoxic ischemic brain injury. Increasing NOS is useful for treating subarachnoid haemorrhage, transient ischemic attacks, stroke, multiinfarct dementia, cerebral vasculitis and traumatic brain injury.

<b>United States:</b>	Patent No:	6,365,573
	Issued:	2 April 2002
	Expiration Date:	6 October 2017, subject to PTR.
	Our File No:	NRNZ 01003US0
	U.S. Recordation:	1 March 2002: Reel/Frame: 012697/0954

Claims: This patent's claims encompass methods for treating patients having a condition in which in increase in a neural enzyme, ChAT, NOS or GAD is desirable, using GPE or an analog thereof in a dosage range of between about 0.04  $\mu$ g to about 0.1  $\mu$ g per 100 g body weight. Dependent claims encompass treating patients having cerebral vasculitis. Additional claims encompass methods for making a medicament suitable of increasing ChAT, NOS or GAD.

Rationale: These patents and applications were filed in recognition of enzymatic mechanisms associated with neural injury. By claiming effects on the enzymes, the claims may cover other conditions that result in alteration of one or more effects on the claimed enzymes.

# 4. Neuronal Rescue Agent

Our File Series No:	NRNZ 01004	
Our file series No.	INKINZ 01004	
Application No:	PCT/NZ98/00139	
Filing Date:	18 September 1998	
Our File No:	NRNZ01004WO0	
Priority Date:	19 September 1997	(NZ No: 328,796)
Expiration Date:	18 September 2018	
Assignment Executed:	Inventors to UniService	es, 16-20 March 2000

Countries in which Patent has Granted:

Australia:

Patent No: Issued:	738,192 3 January 2002
Status:	Granted:
Expiration Date:	Maintenance fee due 18 September 2005. 18 September 2018
Our File No:	NRNZ 01004 AU0



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Countries in which Patent Application is Pending:

United States:	Application No:	10/157,542
	Status:	Pending
	Our File No:	NRNZ 1004 US1
	U.S. Recordation:	21 March 2000: Reel/Frame: 010828/0054

Claims: This application's claims encompass methods for rescuing neurons destined to de from a neuronal insult using activin or an analog thereof. Dependent claims encompass using activin A, activin B or activin AB. Additional dependent claims encompass treating neuronal insults arising from trauma, toxins, asphyxia, hypoxia-ischemia, Huntington's disease, Alzheimer's disease, Parkinson's disease and peripheral neuropathy by activating activin receptors.

Rationale: This application was filed with the recognition that activin receptors can play a role in neural degeneration, and that by activating activin receptors, neuroprotective effects can be achieved.

## 5. Regulation of Tyrosine Hydroxylase

Our File Series No:	NRNZ 01005	
Filing Date:	15 June 1999	(PCT/NZ99/00085)
Priority Date:	15 June 1998	(NZ No: 330,684)
Expiration Date:	15 June 2019	

Countries in which Patent Applications are Pending:

Europe:	Application No: Status: Our File No:	99 928 258.5 Awaiting further Office Action. Maintenance fee due 31 December 2004 NRNZ 01005 EP0
Japan:	Application No: Status: Our File No:	2000-554388 Request for Examination due 3 September 2006. No fee due until request for examination is filed. NRNZ 01005 JP0
United States:	Application No: Status: Our File No:	10/606,574 Awaiting first Office Action NRNZ 1005 US1

Claims: This application's claims encompass methods of treating a patient having a condition in which an increase in tyrosine hydroxylase (TH) is desirable using GPE or an analog thereof. Additional claims are drawn to treating dopaminergic neurons and Parkinson's disease.

Rationale: This application was filed to continue prosecution of claims to the use of GPE to increase TH that did not issue in the parent patent.

Countries in which Patent has Granted:

Australia:	Patent No.	751,217
	Issued:	21 November 2002
	Expiration Date:	15 June 2019
	Status:	Granted:
		Maintenance fee paid 16 June 2004
	Our File No:	NRNZ 01005 AU0



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Claims: This patent's claims encompass methods of treating a patient having a condition in which an increase in tyrosine hydroxylase (TH) is desirable using GPE or an analog thereof. Additional claims encompass treating disorders or conditions involving dopaminergic neurons, using a GPE prodrug, methods for treating Parkinson's disease, use of GPE in manufacture of a medicament useful for increasing TH, and for increasing TH in the substantia nigra.

United States:	Patent No:	6,617,311 B1
	Issued:	9 September 2003
	Expiration Date:	15 June 2019, subject to PTR
	Our File No:	NRNZ 1005 US0

This patent's claims encompass methods for treating a patient having a condition in which Claims: in increase in tyrosine hydroxylase (TH) is desirable using an analog of GPE or a prodrug thereof, GP or PE. Additional claims encompass treating dopaminergic neurons and Parkinson's disease.

#### 6. Neuroprotection

Our File Series No:	NRNZ 01006
Filing Date:	3 September 1999 (PCT/NZ99/00147)
Priority Date:	3 September 1998 (NZ No: 331,719)
Expiration Date:	3 September 2019

Countries in which Patent Applications are Pending:

China:	Application No: Status:	99810613.5 Awaiting third Office Action. Maintenance fees
	Our File No:	to be paid upon issuance of patent. NRNZ 01006 CN0
Europe:	Application No: Status:	99946457.1 Pending, awaiting further Office Action. Instructions to foreign associate to pay annuity fee sent 22 September 2004
	Our File No:	NRNZ 01006 EP0
Japan:	Application No: Status:	2000-568459 Request for Examination due 3 September 2006. Maintenance fees not due until request for examination is filed.
	Our File No:	NRNZ 01006 JP0
United States:	Application No: Status: Our File No:	09/786,982 Awaiting first Office Action NRNZ 01006 US0
ntries in which Patents h	av e Granted:	

Countries in which Patents have Granted:

757,907 Australia: Patent No: Issued: 26 June 2003 Expiration Date: 3 September 2019 Status: Granted: maintenance fee due 3 September 2005 Our File No: NRNZ 01006 AU0



Board of Directors Neuren Pharmaceuticals Ltd.	Pag	e 14 October 28, 2004
New Zealand:	Patent No: Issued: Expiration Date: Status: Our File No:	<ul><li>510,253</li><li>9 September 2003</li><li>3 September 2019</li><li>Granted: maintenance fee due 3 September 2006</li><li>NRNZ 01006 NZ1</li></ul>

Claims: These patents' and applications' claims encompass methods for inducing neuroprotection using growth hormone, an analog thereof or a functionally equivalent ligand. Additional claims encompass use of prolactin, placental lactogen, growth hormone releasing proteins, growth hormone releasing hormone or somatotropin release inhibitory factor. Additional claims include the use of a second agent, IGF-1, activin, GPE, NGF, TGF-ß, growth hormone binding proteins, IGF-binding proteins and bFGF.

Rationale: Tyrosine hydroxylase is an enzyme involved in the synthesis of the neurotransmitter, dopamine. Loss of dopamine and the cells that use it as a neurotransmitter is a characteristic feature of Parkinson's disease. The rationale for this series is based on the understanding that GPE can act to increase tyrosine hydroxylase levels in the brain.

#### 7. GPE Analogs

Our File Series No:	NRNZ 01008
Filing Date:	24 August 2001 (PCT/US01/41883)
Priority Date:	24 August 2000 (NZ No: 506,534)
Expiration Date:	24 August 2020

Countries in which Patent Applications are Pending:

Europe:	Application No: Status:	01968959.5 Pending: awaiting first Office Action. Maintenance fee paid 20 August 2004
	Our File No:	NRNZ 01008 EP0
United States:	Application No: Status: Our File No:	10/362,266 Pending: awaiting Office Action NRNZ 01008 US0

Claims: These applications' claims encompass analogs of GPE that have a binding profile substantially equivalent to that for GPE, has a neural biological activity like that of GPE, but is not GPE, GP or PE. Claims also encompass pharmaceutical compositions containing GPE analogs. Routes of administration include parenteral, and a variety of other routes including oral, nasal, inhalation, vaginal, buccal, pulmonary, topical, and rectal.

## 8. Functional Proteomics Using Double Phage Display Screening

Our File No:	NRNZ 01009 US1
Filing Date:	7 December 2001 (PCT/US01/47836)
Priority Date:	8 December 2000 (US No: 60/254,466)

Countries in which a Patent Application is Pending: United States: Application No:

Application No: Publication Date: Expiration Date: Status: 10/433,73818 March 20047 December 2021, subject to PTA and PTR Pending, awaiting first Office Action



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Claims: This application's claims encompass methods of identifying specific proteins using a twodimensional protein electrophoresis and an antibody phagemid display library. A complex between the protein and a member of the library is formed and the member of the library then is isolated and the DNA of the member is determined to structure of the protein. Additionally, the protein is expressed in the phagemid library to determine functional properties.

Rationale: This method may be very useful in a number of applications in which the understanding of protein structure and function is poorly known. Such methods may find value in future research by licensees.

# 9. Compositions and Methods for the Rescue of White Matter

Our File No:	NRNZ 01010 US2
Filing Date:	7 December 2001 (PCT/US01/47749)
Priority Dates:	8 December 2000 (US No: 60/254,349)
	30 April 2001 (US No: 60/287,668)

Country in which a Patent Application is Pending:

<b>United States:</b>	Application No:	10/013,812
	Publication Date:	6 February 2003 (US 2003-0027755 A1)
	Expiration Date:	7 December 2021, subject to PTA and PTR
	Status:	Pending, awaiting first Office Action

Claims: This application's initial claims encompass methods for restoring myelination of axons in an animal suffering from neural injury or disease, using an IGF-1, an IGF-1 analog, an IGF-1 mimetic, a compound that increases IGF-1 or increases the concentration of an IGF-1 analog. Dependent claims encompass IGF-2, (des 1-3) IGF-1 and interferons. Additional dependent claims encompass diseases including multiple sclerosis, encephalomyelitis, optic neuritis, transverse myelitis, Devic's disease, leukodystrophies, leukoencephalopathy, pontine myelinolysis, hypoxia and ischemia. Additional claims encompass kits for treatment of the above disorders.

Rationale: This application is based on the understanding that neural function may require both neurons and supporting (glial) cells. Demyelinating diseases such as multiple sclerosis may be treated using IGF-1 and related peptides, and may decrease severity of the disease.

# 10. Anti-GPE Antibodies, Their Uses, and Analytical Methods for GPE

Our File Series No:	NRNZ 01016
Filing Date:	14 March 2002 (PCT/US02/08195)
Priority Dates:	16 March 2001 (US No: 60/276796)
Publication Date:	28 November 2002 (US 2002-0177239 A1)
Expiration Date:	14 March 2022

Countries in which Patent Applications are Pending:

<b>United States:</b>	Application No:	10/100,515
	Status:	Pending, awaiting first Office Action.
	Our File No:	NRNZ 01016 US1



**United States:** 

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Europe:	Application No: Status:	02753654.9 Pending, response to be filed. Maintenance fee paid 15 March 2004		
	Our File No:	NRNZ 01016 EP0		
Claimer This		and a set of the diagonal distance of the set of the se		

Claims: This application's initial claims encompass anti-GPE antibodies. Additional claims encompass anti-GPE antisera, methods for analytical detection of GPE using chromatography or radioimmunoassay, assay kits for GPE analysis and methods for extending the half-life of GPE.

Title:	Pharmacokinetics of GPE and Methods of Sustained Administration to Produce
	Reproducible Neuroprotective Effects In Vivo.
Application No:	Not Assigned
Filing Date:	22 October 2004
Status:	Pending
Our File No:	NRNZ 01016 US2

Claims: This application's claims will be intended to encompass methods for infusing GPE into an animal to obtain sustained GPE concentrations in vivo.

Rationale: Understanding the biological fate of GPE may be important in evaluating possible therapies and effectiveness of neuroprotective agents related to GPE. A radioimmunoassay method can be useful for determining kinetics and distribution of GPE after administration.

#### 11. Methods for Promoting Weight Gain Using GPE-Related Compounds Our File Series No: NRNZ 01017 Priority Date: 23 March 2001 (US No: 60/278,562; Our File No: NRNZ 01017 US0)

Countries in which a Patent has Granted:

United States:	Patent No: Issue Date:	6,682,753 27 January 2004
	Filing Date: Publication Date: Expiration Date: Our File No:	13 March 2002 (US No: 10/099,134) 17 October 2002 (US 2002-0151522 A1) 13 March 2022: Subject to PTA and PTR NRNZ 01017 US1

Claims: This patent's claims encompass methods for promoting weight gain in an animal using a GPE-related compound or prodrug in the central nervous system. Additional claims encompass animals having neural injury caused by trauma, Alzheimer's disease, Parkinson's disease, Huntington's disease, AIDS, chronic infection, burns, chronic steroid administration. Additional claims encompass routes of administration including injection into the cerebral ventricle and peripheral injection. Additional claims encompass doses between  $0.1 \mu g/$  to  $400 \mu g/kg/day$ , and to time of treatment from the time of injury to about 100 hours after injury.

Countries in which a Patent Application is Pending:

Europe:	Application No: Filing Date: European Publication: Status:	02726620.4 15 March 2001 (PCT/US02/07686) 14 January 2004 (EP 1379131) Pending, awaiting first Office Action.



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Our File No:

Maintenance fee paid 15 March 2004 NRNZ 01017 EP0

Claims: This application's initial claims encompass the use of GPE-related compounds or prodrugs for manufacture of a medicament for promoting weight gain in an animal having a condition that leads to decreased weight gain or weight loss.

Rationale: Several diseases and conditions include either weight loss or poor weight gain, making recovery often difficult. This series of patents and applications recognize beneficial effects of GPE and related compounds in promoting weight gain.

## 12. GPE Analogs and Peptidomimetics

Our File Series No:	NRNZ 01018
Priority Date:	24 May 2001 (US 60/293,853)
Our File No:	NRNZ 01018 US0

Countries in which Patent Applications are Pending:

United States:	Application No: Filed: Expiration Date: Status: Our File No:	10/155,864 24 May 2002 24 May 2022 Pending: Response to be filed. NRNZ 01018 US1
Europe:	Application No: Filing Date: Status: Our File No:	02731918.5 24 May 2002 (PCT/US02/16361) Pending: Examination requested September 26, 2004. Maintenance fee paid 24 May 2004 NRNZ 01018 EP0
Japan:	Application No: Filing Date: Status: Our File No:	2002-592330 24 May 2002 (PCT/US02/16361) Pending: Request for Examination to be filed by May 25, 2005. No maintenance fee due until request for examination is filed. NRNZ 01018 JP0

Claims: This application's initial claims encompass synthetic organic compounds that are structurally related to GPE and to methods for treating animals with such compounds.

Rationale: Synthetic GPE analogs having neuroprotective effects can be useful therapeutic agents, as is GPE. Because these analogs are novel, the expiration date of a patent on these compounds is later than the expiration date for patents relating to GPE. Further, some of the synthetic analogs of GPE may have longer biological half-lives, and therefore may be useful in treating chronic conditions in which long-term therapy may be required.

13.	Methods for Pro	oviding Neuroprotec	ction and/or Neurorestoration	Via the Neural Activin
	Type IIB Recepto	or		
	Priority Date:	22 June 2001	(US 60/300,514; PCT/US02/20	111)

Priority Date:	22 June 2001	(US 60/300,514; PCT/US02/20111)
Our File No:	NRNZ 01019	US0



# Fliesler Meyer LLP

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Country in which a Patent Application is Pending:

United States:	Application No: Filing Date:	10/177,735 20 June 2002
	Expiration Date: Status: Our File No:	22 June 2022. Date subject to PTA and PTR. Pending: awaiting first Office Action NRNZ 01019 US1

Claims: This application's initial claims encompass methods for treating animals having neurodegenerative conditions using agents that activate activin type IIB receptors. Additional claims encompass agents that disinhibit activin type IIB receptors.

Rationale: This application is based on the discovery that activin's neuroprotective actions may be mediated by particular types of activin receptors.

# 14.Neural Regeneration Peptides and Methods for Their Use in Treatment of Brain Damage<br/>Our File Series No:NRNZ 01023

Countries in which Patent Applications are Pending:

United States:	Application No: Filing Date: Priority Date: Publication Date: Expiration Date: Our File No: Status:	10/225,838 22 August 2002 24 August 2001 (US 60/314,952) 13 November 2003 (US 2003-0211990-A1) 22 August 2022. Date subject to PTA and PTR. NRNZ 01023 US1 Pending: To be superceded by a CIP to be filed by 31 October 2004
		by 31 October 2004.

Claims: This application's initial claims encompass novel neural regeneration peptides (NRPs), a new class of peptides that promote neural cell proliferation, migration, neurite growth and neural survival. Additional claims encompass methods for using NRPs to treat neurodegenerative conditions. Additional claims encompass vectors and cells capable of expressing NRPs, uses of those cells to treat neurodegenerative conditions. Additional claims encompass methods for treat neurodegenerative conditions. Additional claims encompass methods for treat neurodegenerative conditions. Additional claims encompass methods for treating Alzheimer's disease, Parkinson's disease, hypoxia, ischemia and Huntington's disease. Other claims encompass methods for *in vitro* functional assays for NPRs and test kits suitable for use in functional assays.

United States Provisional Application:	
Title:	Neural Regeneration Peptides and Methods for
	Their Use
Application No:	60/516,018
Filing Date:	31 October 2003
Our File No:	NRNZ 01023 US3
Status:	Pending, due to expire October 31, 2004.
	Will file a CIP of NRNZ 1023 US1 claiming priority to this application.
	1 5 11

Claims: This application's initial claims encompass methods for promoting stem cell differentiation into a neuronal phenotype, axonal outgrowth, neuroblast proliferation and stem cell migration using a neural regeneration peptide (NRP). Additional claims encompass methods for treating



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neurodegenerative conditions and for repopulating a portion of the nervous system of a mammal using implanted neuroblast cells and an NRP.

United States P	rovisional Application:	
	Title:	Neural Regeneration Peptides: A New Class of Chemoattractive and Neuronal Survival Promoting Proteins
	Application No; Filing Date: Status:	60/585,041 2 July 2004 Pending: due to expire 2 July 2005. Will file a
		CIP of NRNZ 1023 US1 claiming priority to this application. This application was filed before a manuscript covering the subject matter was submitted for publication.
	Our File No:	NRNZ 01023 US4
Europe:	Application No: Filing Date: Priority Date: Publication Date: Expiration Date: Status: Our File No:	02770419.6 22 August 2002 (PCT/US02/26782) 24 August 2001 (US 60/314,952) 6 March 2003 (WO 03/018754 A2) 22 August 2022. Pending: Amendment to be filed. Maintenance fee paid 24 August 2004. NRNZ 01023 EP0
Japan:	Application No: Filing Date: Priority Date: Publication Date: Expiration Date: Status:	<ul> <li>2003-523605</li> <li>22 August 2002 (PCT/US02/26782)</li> <li>24 August 2001 (US 60/314,952)</li> <li>6 March 2003 (WO 03/018754 A2)</li> <li>24 August 2022</li> <li>Pending: Request for Examination to be filed by</li> <li>22 August 2005. Preliminary amendment to be filed.</li> </ul>
	Our File No:	NRNZ 01023 JP0

Claims: These applications' initial claims encompass neural regeneration peptides (NRPs), methods for their use in treating neurodegenerative conditions and methods for their analysis.

# **United States:**

Title:	Neural Regeneration Peptides and Methods for	
	Their Use in Treatment of Brain Damage	
Status:	To be filed by 31 October 2004 as a CIP of	
	NRNZ 1023 US1, claiming priority to NRNZ	
	01023 US3 and NRNZ 01023US4.	
Our File No:	NRNZ 01023 US2	

Claims: This application's claims will include those of NRNZ 1023 US1 as well as new material from NRNZ 1023 US3 and NRNZ 1023 US4. New matter includes further descriptions of effects of NRPs and tissue culture methods for analyzing effects of NRPs *in vitro*.

Rationale: The rationale for patenting NRPs is based on the discovery that a novel class of proteins and peptides have neuroprotective effects, and that they may be useful for treating a variety of neurodegenerative conditions. NPRs may provide alternatives to GPE, IGF-1 and related synthetic



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compounds. Additionally, being products of DNA, NRPs can be introduced into cells using gene therapy techniques, and therefore may provide long-lasting neuroprotection.

# 15. Treatment of Demyelinating Diseases

Our File Series No:	NRNZ 01033
Filing Date:	11 October 2001 (PCT/US01/32187)
Priority Date:	12 October 2000 (NZ 507478)
Our File No:	NRNZ 01033 WO0

Country in which a Patent Application is Pending:

Europe:	Application No: Our File No: Expiration Date: Status:	01981601.6 NRNZ 01033 EP0 11 October 2021 Pending; next maintenance fee due 30 October 2004. This application is of similar scope as NRNZ 1034 US0 but with claims drafted for Europe.
	Our File No:	NRNZ 01033 EP0

Claims: The claims of this application encompass methods of treating degeneration of white matter and the death of oligodendrocytes (glial cells) using GPE, analogs or prodrugs thereof in combination with a kainate inhibitor. Additional claims encompass treating encephalomyelitis, optic neuritis, transverse myelitis, Devic's disease, leucodystrophies, multiple sclerosis, leukoencephalopathy, pontine myelonolysis and haemorrhagic encephalitis. Additional claims encompass medicaments made using a combination of GPE, GPE analogs or prodrugs of GPE and a kainate inhibitor.

16.	Treatment of Demyo	elinating Diseases		
	Our File Series No:	NRNZ 01034		
	Filing Date:	22 September 2003	(PCT/US01/32198)	
	Priority Date:	11 October 2000	(NZ 507478)	
	Expiration Date:	22 September 2023	, ,	

Country in which a Patent Application is Pending:

United States:	Application No: Expiration Date: Status:	10/398,876 22 September 2023 Pending: This application is of similar scope to NRNZ 1033 EP0, but with claims drafted for the U.S.
	Our File No:	NRNZ 01034 US0

Claims: The claims of this application encompass methods of treating degeneration of white matter and the death of oligodendrocytes (glial cells) using GPE, analogs or prodrugs thereof in combination with a kainate inhibitor and an antiinflammatory agent. Additional claims encompass use of anti-MAdCAM-1 antibodies or antibodies against integrin- $\alpha$ 4 receptors. Additional claims encompass treating encephalomyelitis, optic neuritis, transverse myelitis, Devic's disease, leucodystrophies, multiple sclerosis, leukoencephalopathy, pontine myelonolysis and haemorrhagic encephalitis. Additional claims encompass manufacture of medicaments made using a combination of GPE, GPE analogs or prodrugs of GPE and a kainate inhibitor and an antiinflammatory agent. Claims also encompass kits containing drugs for use in treating demyelinating diseases.



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Rationale: The rationale for the two applications immediately above is based on the discovery that GPE and related peptides can be useful in protecting myelin. Myelin is a material that acts like an insulator of nerve cells to promote rapid neurotransmission. Loss of myelin is associated with numerous diseases, including multiple sclerosis. Thus, in addition to being useful for treating neurodegenerative conditions such as hypoxia, Alzheimer's disease, GPE may also be useful for treating other serious, chronic conditions involving loss of neural function.

#### 17. Neuroprotective Macrocyclic Compounds and Methods for Their Use Our File Series No: NRNZ 01048

Priority Dates: 20 March 2003 (US 60/456,136) Our File No: NRNZ 1048 US0); 23 September 2003 (US 60/505,119) Our File No: NRNZ 1051 US0)

Applications Pending:

<b>PCT International:</b>	Application No:	PCT/US2004/008108
	Filing Date:	16 March 2004
	Expiration Date:	16 March 2024
	Our File No:	NRNZ 01048 WO0
	Status:	Pending in International Phase. File 30-month
		National Phase applications by 20 September
		2005.

Claims: This application's initial claims encompass synthetic GPE analogs in which one or other of the ends of the peptide analog are bonded to another portion of the molecule to produce a GPE analog having a second ring structure. Additional claims encompass methods for using macrocyclic GPE analogs to treat neurological conditions involving nerve cell death or degeneration. Additional claims encompass therapies for hypoxia, Huntington's disease, Alzheimer's disease, Parkinson's disease, multiple sclerosis, amyotrophic lateral scleros is, peripheral neuropathies, spinal muscular atrophy, Creutzfeldt-Jacob disease, AIDS dementia, and other diseases. Other claims encompass use of additional neuroprotective agents, including IGF-1, IGF-II, TGF- $\beta$ , activin, growth hormone and others. Further claims encompass use of macrocyclic GPE analogs in combination with anti-inflammatory agents.

Rationale: This series of applications is based on the synthesis of novel analogs of GPE that have neuroprotective effects but are not likely to be metabolized rapidly, as is GPE. These compounds and methods may be useful in treating chronic neurodegenerative conditions. Further, compounds of these classes may be patentable independently of GPE, and thus, may have a patent life that extends beyond the life of the GPE patents.

# 18. Diketopiperazine Derivatives of Cyclic PG and Their Neuroprotective Effects

Our File Series No:	NRNZ 01050
Priority Date:	3 September 2003 (US 60/499,956)
Our File No:	NRNZ 01050 US0

Applications Pending:

<b>PCT International:</b>	Application No:	PCT/US2004/28308
	Filing Date:	31 August 2004
	Expiration Date:	31 August 2024
	Status:	Pending in International Phase. File National
Phase applications by 31 Ma		Phase applications by 31 March 2006.
	Our File No:	NRNZ 01050 WO0


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Claims: Claims of this application encompass synthetic molecules having the two ends of the peptide bound to each other to form a second ring structure within the compound. Other claims encompass pharmaceutical compositions having these compounds and uses of these compositions to treat neurodegenerative conditions resulting from injury or disease. Conditions to be treated include hypoxia, stroke, cardiac bypass surgery Huntington's disease, Alzheimer's disease, Parkinson's disease, multiple sclerosis, amyotrophic lateral sclerosis, peripheral neuropathies, spinal muscular atrophy, Creutzfeldt-Jacob disease, AIDS dementia, and other diseases. Additional claims encompass co-administration of a diketopiperazine derivative of cyclic PG along with another neuroprotective agent.

Rationale: Compounds of these classes may be patentable independently of GPE, and thus, may have a patent life that extends beyond the life of the GPE patents. Note that these compounds are structurally different from the macrocyclic compounds that are the subject of other filed patent applications (see item 17 above).

### **19. Pharmacokinetics of GPE**

Our File Series No: NRNZ 01052

Applications Pending:

### **Unites States Provisional:**

Title:

Status:

Application No:

Expiration Date:

Filing Date:

Our File No:

Pharmacokinetics of GPE and Methods of Administration
60/513,851
23 October 2003
23 October 2004
To be abandoned in favor of Utility application based upon U.S. Provisional No: 60/515,397
NRNZ 01052 US0

### **Unites States Provisional:**

Title:

Application No: Filing Date: Expiration Date: Our File No: Status:

### **PCT International Application:**

Title:

based upon U.S. Provisional No: 60/515,397 NRNZ 01052 US0 Pharmacokinetics of GPE and Methods of Administration 60/515,397 28 October 2003 28 October 2004 NRNZ 01052 US1

Pending: Consider filing utility application by 23 October 2004.

### Neuroprotective Effects of Gly-Pro-Glu Following Intravenous Infusion

Not yet assigned 22 October 2004 Pending: Claimed priority to U.S. Provisional Applications Serial Nos: 60/515,397 and 60/513,851 NRNZ 0052 WO0

Our File No:

Application No:

Filing Date: Status:

Claims: Proposed claims of this application encompass an anti-GPE antibody useful for measuring GPE concentrations in samples, including plasma. Other proposed claims encompass chromatographic methods for measuring GPE. Additional proposed claims encompass using an anti-GPE antibody to increase the half-life of GPE in the plasma to prolong the effects of GPE.



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**Unites States Provisional:** 

Application No: Filing Date: Expiration Date: Status:

Our File No:

Title:

NeuroprotectiveEffectsofGly-Pro-GluFollowing Intravenous Infusion60/533,68816 March 200416 March 2004Pending: File utility application by 23 October2004.NRNZ 01052 US2

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Claims: Proposed claims of this application encompass infusing GPE or both infusing GPE and providing a bolus injection of GPE to treat neurodegeneration associated with numerous types of diseases and injuries. Additional proposed claims encompass treating neurodegeneration using bolus injection and/or infusion of GPE along with another neuroprotective agent.

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Rationale: GPE has a short half-life in vivo and therefore, providing an infusion of the drug can increase its effects.

### **20. GPE and Caffeinol** Our File Series No: NRNZ 01053

Applications Pending:

Unites States Provisional: Title

Title:	GPE and GPE Analogs/Peptidomimetics And
	Caffeinol Improve Sensory-Motor Functional
	<b>Recovery After Stroke in Rat</b>
Application No:	60/557,940
Filing Date:	30 March 2004
Expiration Date:	30 March 2005
Assignees:	Neuren and the University of Texas.
Status:	Pending: File utility application by 30 March
	2005.
Our File No:	NRNZ 01053 US0

Claims: This application was not filed with claims, being prepared as a manuscript for filing as a publication.

# Unites States Provisional:

Title:	GPE and G2Me-PE in Combination with
	<b>Caffeinol Improves Sensory Motor Functional</b>
	Recovery After Stroke
Application No:	60/572,627
Filing Date:	19 May 2004
Expiration Date:	19 May 2005
Status:	Pending. Recommend filing utility application by
	30 March 2005 claiming priority to NRNZ 01053
	US0 and NRNZ 01050 US1.
Our File No:	NRNZ 01053 US1

Claims: This application's claims encompass co-administration of GPE or a GPE peptidomimetic and a combination of low dose ethanol and a low dose of caffeine ("Caffeinol").



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21.	Use of Gly-Pro-Glu to Trea	t Spinal Cord and Periph	eral Nerve Injury
	United States Provisional:	Application No:	60/538,577
		Filing Date:	23 January 2004
		Expiration Date:	23 January 2005
		Status:	Pending. Consider filing utility
			application by 23 January 2005. This is a
			second filed U.S. Provisional.
			Prior provisional filed 23 January 2003.
		Our File No:	NRNZ 2023 US1
Claims.	Contemplated claims	s encomnass compositions	and methods for treating spinal cord or

Claims: Contemplated claims encompass compositions and methods for treating spinal cord or peripheral nerve damage using GPE, GP and/or PE. Additional claims encompass use in spinal surgery or peripheral nerve damage.

### II. Endocrinz

The patent estate of Endocrinz licensed from UniServices in a License Agreement dated 5 March 2002 was amended in an Addendum dated 2 October 2002, by which Endocrinz obtained rights to certain UniServices patents and patent applications. Upon execution of the Addendum to the License Agreement, executed as of 2 June 2004 and signed 15 October 2004, Neuren has obtained all the rights and obligations of Endocrinz with regard to those patents and applications.

### 1. Hypertension Treatment

v 1	
Our File Series No:	ERNZ 01001
Filing Date:	4 July 2002 (PCT/NZ02/00118)
Priority Date:	6 July 2001 (NZ 512832)
Expiration Date:	4 July 2022
Assignee:	Auckland UniServices Ltd.
Licensee:	Neuren
Status:	Expired: National Phase Applications Filed

Countries in which Patent Applications are Pending:

Europe:	Application No: Status: Our File No:	02760910.8 Pending. Awaiting first Office Action. Maintenance fee paid 23 July 2004. ERNZ 01001 EP0
Japan:	Application No: Status:	2003-510077 Pending. Request for examination by 4 July 2005.
	Our File No:	ERNZ 01001 JP0
United States:	Application No: Status: Our File No:	10/482,854 Pending, awaiting first Office Action. ERNZ 01001 US0

### 2. Treatment of Hypertension

Filing Date:	26 November 1999 (PC	T/NZ99/00198)
Priority Date:	26 November 1998	(NZ 333,035; Our File No: ERNZ 01003 NZ0)
Expiration Date:	26 November 2019	
Assignee:	Auckland UniServices I	.td.
Licensee:	Neuren	

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Status: Our File Series No:	Expired: National Phase Applications filed. ERNZ 01003		
Countries in which Patents hav	ve Granted		
Australia:	Patent No: Issue Date: Expiration Date: Status: Our File No:	761,880 25 September 2003 26 November 2019 Granted: maintenance fee due 26 N ERNZ 01003 AU0	lovember 2004
New Zealand:	Patent No: Issue Date: Expiration Date:	511,817 8 December 2003 26 November 2019	

Country in which Patent Applications are Pending:

Status:

Our File No:

United States:	Application No: Expiration Date:	09/856,704 November 26, 2019. Date subject to PTA and PTR.
	Status:	Request for Continued Examination (RCE) to be filed.
	Our File No:	ERNZ 1003 US0

Granted:

ERNZ 01003 NZ1

Claims: Claims of this application encompass methods for treating hypertension comprising administering growth hormone. Dependent claims encompass hypertension caused by fetal under-nutrition or over-nutrition. Additional claims encompass treating adults having a history of fetal under-nutrition, over-nutrition, or post-natal under-nutrition or over-nutrition. Further claims encompass using agents that cause the release of growth hormone. Additional claims encompass using additional anti-hypertensive agents.

Rationale: This invention is based upon the discovery that pre-natal and post-natal distress can cause a condition known as "fetal programming" resulting in hypertension in later life.

Canada:	Application No: Expiration Date: Status: Our File No:	CA 2,352,316 26 November 2019 Pending, request for examination filed. Next annuity fee is due 26 November 2004. ERNZ 01003 CA0
Europe:	Application No: Expiration Date: Status:	EU99972524.5 26 November 2019 Examination report received, response due 28 December 2004. Next annuity fee due 22 January 2005
	Our File No:	ERNZ 01003 EP0
Japan:	Application No: Expiration Date: Status: Our File No:	JP583473/00 26 November 2019 Awaiting examination ERNZ 01003 JP0

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3.	20 kDa Placental Growth Hormone Variant		
	Our File Series No:	ERNZ 01016	
	Applicants:	Neuren Pharmaceuticals Ltd. and Neuren Pharmaceuticals Inc.	

*Countries in which Patent Applications are Pending:* 

PCT International Application:					
Title:	Somatogenic	Therapy	Using	a 20	kDa
	Placental Vari	iant of Gro	wth Ho	rmone	
Application No:	PCT/US04/271	87			
Filing Date:	19 August 2004	1			
Priority Date:	20 August 2003	3 (US 60/49	6,970)		
Expiration Date:	19 August 2024	1			
Status:	Pending in In	ternational	Phase.	National	Phase
	filing is due by	20 February	2006.		
Our File No:	ERNZ 01016 V	WO0			

Claims: These applications' claims encompass use of a 20kDa placental variant of growth hormone (GH) or a peptide having similar actions to treat various conditions relating to delayed or slow growth. Conditions include short stature, skeletal dysplasia, cystic fibrosis, kidney failure, depression, memory loss, anorexia and hypertension.

Rationale: Therapy with the 20kDa GH placental variant can provide an alternative to conventional GH therapy with reduced undesirable side effects.

### 4. **Consequences of Fetal Programming**

1	8 8
Filing Date:	11 December 2001(PCT/NZ01/00277)
Priority Date:	11 December 2000 (NZ 508,779)
Assignee:	Auckland UniServices Ltd.
Licensee:	Endocrinz Ltd.
Our File:	ERNZ 01018 WO0
Status:	Expired. National Phase application was filed in U.S.

Country in which a Patent Application is Pending:

United States:	Title:	Management of the Consequences of Fetal Programming
	Application No:	10/450,232
	Expiration Date:	11 December 2021 Date subject to PTA and/or
	Status:	PTR. Pending: awaiting first Office Action.
	Our File No:	ERNZ 01018 US0

Claims: Pending claims encompass methods for treating adverse consequences of fetal programming using IGF-1, or an analog of IGF-1 or a functionally equivalent ligand. Adverse consequences of fetal programming can include hyperphagia (overeating), obesity, insulin resistance, or cardiovascular disease (hypertension).

Rationale: People having a history of fetal malnutrition or hypernutrition, perinatal undernutrition or hypernutrition can exhibit, later in life, one or more adverse consequences, including obesity, diabetes, hypertension or other undesirable conditions. This condition is termed "Fetal Programming." This application is based on the discovery that treating animals subjected to fetal programming with IGF-1 can reduce adverse consequences of fetal programming.



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### 5. Regulation of Angiotensin II Receptors in Mammals Subject to Fetal Programming

United States:	Application No: Filing Date: Priority Dates:	10/643,450 19 August 2003 19 August 2002 (NZ No: 520,886) 10 June 2003 (US No: 10/450,232)
	Expiration Date:	19 August 2023. Date Subject to PTA and/or PTR. Date subject to further review in light of 10 June 2003 priority claim.
	Status:	Published and pending. Awaiting first Office Action.
	Assignee:	Auckland UniServices Ltd.
	Licensee:	Neuren
	Our File No:	ERNZ 01018 US1

Claims: Pending claims encompass methods for modulating density and/or distribution of angiotensin II ("AII") receptors in the kidney using IGF-1. Other claims encompass reducing AII receptors and reducing hypertension associated with AII action. Further claims encompass co-administering IGF-1 along with another anti-hypertensive agent, such as the angiotensin converting enzyme (ACE) inhibitors, captopril, elanopril, and other like agents. Additional claims encompass enhancing antihypertensive effects of ACE inhibitors using combination therapy with IGF-1.

Rationale: The enzyme angiotensin converting enzyme (ACE) acts on a peptide, angiotensinogen, to ultimately produce angiotensin II (AII). Angiotensin II can increase blood pressure by acting directly on blood vessels and on the kidney. This application is based on the discovery that AII receptors can be decreased, and therefore that the effects of AII can be decreased by IGF-1 administration. Co-therapy with ACE inhibitors can further reduce the amount of AII and can further decrease blood pressure in subjects with hypertension.

### 6. Fetal Growth

PCT Application No:	PCT/NZ95/00132	
PCT Publication No:	WO/96/19235	
Publication Date:	27 June 1996	
Filing Date:	19 December 1995	
Priority Date:	21 December 1994	(NZ No: 270239)
Status:	Expired: National Pha	se Patent in U.S.

Country in which a Patent Granted: United States: Title

Title:Use of IGF-1 to Prevent/Treat IUGR of<br/>Mammalian FoetusesPatent No:US 5,858,966Issue Date:12 January 1999Priority Date:19 December 1995Expiration Date:19 December 2015. Date subject to PTR.Assignee:Auckland UniServices Ltd.Licensee:Neuren

Claims: This patent's claims encompass methods of enhancing growth of a fetus or fetal organs by administering IGF-1 to amniotic fluid or the gastrointestinal tract of the fetus. Additional claims encompass using recombinant IGF-1, des (1-3 N) IGF-1, and promoting placental growth using IGF-1. Claims also encompass administering IGF-1 along WIGP) its binding protein.

Rationale: Intrauterine growth retardation (IUGR) is a major cause of intrauterine and neonatal mortality and morbidity. This patent is based on the discovery that administration of IGF-1 to a fetus



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enhances fetal growth and promotes growth of fetal organs including the placental, pulmonary, hepatic, renal, splenic, thymic and immune systems.

### III. Neuren Pharmaceuticals Ltd.

1. Therapy for Growth Hormone Induced Insulin Resistance in Juveniles with Growth Disorders

PCT Application:	(PCT/NZ02/00292)	
Filing Date:	23 December 2002	
Priority Dates:	24 December 2001	(NZ 516,421)
	4 October 2002	(NZ 521,824)
Assignee:	Auckland UniServices	Ltd.
Licensee:	Neuren	
Status:	Expired: National Pha	ase application was filed in U.S.

Country in which a Patent Application is Pending: United States: Application No:

0	
Application No:	10/499,902
Filing Date:	23 June 2004
Priority Date:	23 December 2002 (PCT/NZ02/00292)
Status:	Awaiting Notice to file Missing Parts
	(Declaration)
Expiration Date:	23 December 2022. Date subject to PTA and/or
	PTR.
Our File No:	NEUN 01000 US0

Claims: This application's initial claims encompass methods for preventing and/or treating an adverse consequence of growth hormone treatment comprising administering growth hormone in combination with an insulin sensitizer. Additional claims encompass a variety of adverse consequences, including insulin resistance, hyperinsulinemia, diabetes mellitus, dyslipidemia, hypertension and/or obesity. Additional claims encompass insulin sensitizers including biguanides and thiazolidinediones. Additional claims are directed toward the insulin sensitizers troglitazone and metaformin. Further claims encompass pharmaceutical compositions comprising growth hormone and insulin sensitizers.

Rationale: Children exposed to an adverse pre or post-natal environment may experience growth retardation resulting in short stature. Growth hormone has been used to stimulate normal growth in such children. However, growth hormone therapy may lead to reduction in insulin sensitivity, hyperinsulinemia and disorders of metabolism. The discovery that insulin sensitizers can overcome adverse effects of growth hormone treatment can provide new ways of treating children with growth retardation without the typical side effects of growth hormone therapy.

Additional details of the patents and applications contained in this Report can be obtained. There is no guarantee that any particular patent application will be granted, and there is no guarantee that any issued patent will be held valid in a court proceeding. If any information in this report is in error, please let me know immediately.

D. Bunjein Borrow

D. Benjamin Borson, Ph.D., J.D.

Cc: David Clarke, Chief Executive Officer DBB/NEUN/0000/Patent Report 28 October 2004.doc



### SECTION 11

# INDEPENDENT ACCOUNTANT'S REPORT AND FINANCIAL INFORMATION



# PITCHER PARTNERS

ABN 72 103 614 446

AFS LICENCE NO. 227 719

Level 3 60 Castlereagh Street, Sydney New South Wales Australia 2000

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8 November 2004

The Directors Neuren Pharmaceuticals Limited PO Box 9923 Newmarket Auckland NEW ZEALAND

### **Independent Accountant's Report on Historical Financial Information**

We have prepared this Independent Accountant's Report ("the Report") on historical company financial information of Neuren Pharmaceuticals Ltd ("the Company") for inclusion in a Prospectus dated on or about 15 November 2004 relating to the issue of 37,500,000 new shares in the Company and listing on the Australian Stock Exchange.

Expressions defined in the Prospectus have the same meaning in this report.

Pitcher Partners NSW Corporate Pty Limited holds an Australian Financial Services License (No. 277719) issued by the Australian Securities and Investments Commission for providing financial product advice, including independent accountant's reports.

### Background

Neuren Pharmaceuticals Limited (formerly EndocrinZ Limited) was incorporated in New Zealand on 17 December 2001 as an unlisted public company. The Company acquired the assets, liabilities, and business as a going concern of NeuronZ Limited on 1 January 2004. The company changed its name to Neuren Pharmaceuticals Limited on 2 June 2004.

Neuren Pharmaceuticals Limited is a biosciences company operating from New Zealand with activities in New Zealand, Australia and the USA. The principal business function of the Company is the facilitation of the discovery and development of human therapeutics.

### Functional currency

The functional currency of the Company is New Zealand dollars. The historical financial information contained in Section 11 of the Prospectus has been presented in New Zealand dollars.

### Combined pro forma historical financial information

The pro forma historical financial information for the years ended 31 December 2002 and 31 December 2003 contained in Section 11 of the Prospectus reflect the combined audited results of Neuren Pharmaceuticals Limited (formerly EndocrinZ Limited) and NeuronZ Limited with pro forma adjustments as detailed in Section 11 of the Prospectus. The pro forma historical financial information has been presented on a combined basis as it is considered by the Directors to be more relevant and consistent with the presentation of the pro forma financial information for the 6 months to 30 June 2004.

### Basis of preparation of historical financial information

The historical financial information has been prepared in accordance with the New Zealand Companies Act 1993 and have been prepared in accordance with the New Zealand Financial Reporting Act 1993, in conformity with generally accepted accounting practice in New Zealand. The Directors have detailed the reasons for using New Zealand accounting standards and financial effect of not adopting Australian accounting standards in Section 11 of this Prospectus.

### Scope

You have requested Pitcher Partners NSW Corporate Pty Limited to prepare a report covering the following information:

- a) The pro forma historical statement of financial performance of the Company for the years ended 31 December 2002 and 31 December 2003, and the six months to 30 June 2004, as set out in Section 11 of the Prospectus;
- b) The pro forma historical statement of financial position of the Company as at 30 June 2004 and the pro forma statement of financial position as at 30 June 2004 which assumes completion of the allotment and issue of up to a maximum of 37,500,000 fully paid ordinary shares in the capital of the Company and the receipt of up to a maximum of \$15,000,000 from the proceeds of the General Offer, as set out in Sections 11 of the Prospectus; and
- c) the pro forma historical statement of cash flow of the Company for the years ended 31 December 2002 and 31 December 2003, and the six months to 30 June 2004, and the pro forma historical cash flows of the company for the six months to 30 June 2004 which assumes completion of the allotment and issue of up to a maximum of 37,500,000 fully paid ordinary shares in the capital of the Company and the receipt of up to a maximum of \$15,000,000 from the proceeds of the General Offer, as set out in Section 11 of the Prospectus.

The above is referred to collectively as the "historical financial information".

### **Review of Historical Financial Information**

The pro forma historical financial information set out in the Prospectus in Section 11 has been derived from the following:



- financial statements of Neuren Pharmaceuticals Limited (formerly EndocrinZ Limited) for the years ended 31 December 2003 and 31 December 2002 audited by PricewaterhouseCoopers;
- 2. financial statements of NeuronZ Limited for the years ended 31 December 2003 and 31 December 2002 audited by PricewaterhouseCoopers; and
- 3. financial statements of Neuren Pharmaceuticals Limited for the six months ended 30 June 2004 audited by PricewaterhouseCoopers.

PricewaterhouseCoopers has issued an unqualified opinion in respect of each of the financial statements identified above. PricewaterhouseCoopers made the following Emphasis of Matter in their audit report in respect to the financial statements for the six months ended 30 June 2004:

'In forming our unqualified opinion, we have considered the adequacy of the disclosures made concerning the carrying values of intellectual property, and the ongoing need to fund the operating losses and future development of the Company's products. During the period the Company issued ordinary share capital in consideration for the acquisition of the intellectual property and other assets and liabilities of the business of NeuronZ Limited. There are inherent uncertainties associated with assessing the carrying value. The ultimate realization of the carrying value of intellectual property totalling \$12,031, 000 (after amortisation) is dependent on the Company successfully developing its products, on licensing the products, or divesting the intellectual property so that it generates future economic benefits to the Company...'

'The financial statements have been prepared on a going concern basis, the validity of which depends on the Company's ability to raise additional financing through public or private equity financings, collaborations or other arrangements with corporate sources or other sources of financing to fund the development of products and other working capital requirements of the Company. The financial statements do not include any adjustments that would result from a failure to obtain funding...'

'If the Company was unable to continue in operational existence for the foreseeable future, adjustments would have to be made to reflect the situation that the assets, including the intellectual property, may need to be realised at other than amounts at which they are currently recorded in the Statement of Financial Position.'

The Directors are responsible for the preparation of the historical financial information. We have conducted our review of the historical financial information in accordance with Australian Auditing Standard AUS 902 "Review of Financial Reports". We made such inquiries and performed such procedures as we, in our professional judgment, considered reasonable in the circumstances including:

- ## analytical procedures on the financial performance of the Company for the relevant historical period;
- ∉# review of work papers, accounting records and other documents;
- ## analytical procedures on the statement of financial position of the Company as at 30 June 2004;
- ∉# comparison of consistency in application of the recognition and measurement principles in accounting standards and other mandatory professional reporting requirements and the accounting policies adopted by the Company disclosed in the



Prospectus, including the application of New Zealand Accounting Standards, and the accounting policies adopted by the Company disclosed in Section 11 of the Prospectus; and

∉# inquiry of Directors, management and others.

These procedures do not provide all the evidence that would be required in an audit, thus the level of assurance provided is less than given in an audit. We have not performed an audit and, accordingly, we do not express an audit opinion on the historical financial information.

### Conclusion

Based on our review, which is not an audit, nothing has come to our attention which causes us to believe that the historical financial information, as set out in Sections 11 of the Prospectus, has not been properly prepared in accordance with the recognition and measurement principles prescribed in New Zealand Accounting Standards and other mandatory professional reporting requirements in New Zealand, and accounting policies adopted by the entity disclosed in Section 11 of the Prospectus.

### **Subsequent Events**

To the best of our knowledge and belief no material transactions or events outside of the ordinary business of the Company have come to our attention that would require comment on, or adjustment to, the information referred to in our report or that would cause such information to be misleading or deceptive.

### **Disclosure of Interest**

Pitcher Partners NSW Corporate Pty Limited does not have any interest in the outcome of the offer and subsequent listing, other than in connection with the preparation of this Report.

Neuren Pharmaceuticals Limited has agreed to indemnify and hold Pitcher Partners NSW Corporate Pty Limited and its employees, officers and agents from any claims arising out of misstatement or omission in any material or information supplied by Neuren Pharmaceuticals Limited for the purpose of this report.

Consent for the inclusion of the Independent Accountant's Report in the Prospectus in the form and context in which it appears has been given. At the date of this report consent has not been withdrawn.

Yours faithfully Pitcher Partners NSW Corporate Pty Limited

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Deborah Cartwright Partner

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# PRO FORMA HISTORICAL STATEMENT OF FINANCIAL PERFORMANCE

The following table summarises the adjusted pro forma financial performance of Neuren Pharmaceuticals Limited for the 6 month period ended 30 June 2004 and the financial years ended 31 December 2003 and 2002 respectively. The table reflects the combined historical audited results of Neuren Pharmaceuticals Limited and of NeuronZ Limited. Neuren Pharmaceuticals Limited acquired the assets, liabilities and business as a going concern of NeuronZ Limited with effect from 1 January 2004. Items adjusted from the audited historical results to reflect the business of Neuren Pharmaceuticals Limited on the completion of the capital raising that is subject to this Prospectus are shown in note 2.

	NOTE	6 MONTHS TO 30 JUNE 2004 NZ\$000's	12 MONTHS TO 31 DECEMBER 2003 NZ\$000's	12 MONTHS TO 31 DECEMBER 2002 NZ\$000's
Research revenue		843	3,241	2,283
Sale of technology		0	0	6,700
Interest income		5	219	318
Total revenue		848	3,460	9,301
Loss before interest, tax, depreciation and amortisation		(2,162)	(5,867)	(5,309)
Depreciation and amortisation		658	587	565
Loss before tax		(2,820)	(6,454)	(5,874)
Income tax expense		0	0	0
Loss after tax	2	(2,820)	(6,454)	(5,874)

# PRO FORMA HISTORICAL STATEMENT OF FINANCIAL POSITION

The following table summarises the actual audited historical statement of financial position of Neuren Pharmaceuticals Limited as at 30 June 2004 together with the pro forma post listing position to which this prospectus relates.

	NOTE	"POST LISTING" PRO-FORMA 30 JUNE 2004 NZ\$000's	HISTORICAL ACTUAL 30 JUNE 2004 NZ\$000's
	NUTE	NZ\$000 S	ΝΖΦΟΟΟ S
ASSETS			
Current assets:			
Cash and cash equivalents	4	15,010	362
Other current assets		2,770	2,770
Total current assets		17,780	3,132
Non current assets:			
Fixed assets		109	109
Intangible assets	5	12,031	12,031
Total non current assets		12,140	12,140
TOTAL ASSETS		29,920	15,272
LIABILITIES AND SHAREHOLDERS' FUNDS			
Current liabilities:			
Accounts payable and accrued liabilities		2,585	2,585
Total current liabilities		2,585	2,585
SHAREHOLDERS' FUNDS			
Share capital		35,806	21,158
Accumulated deficit		(8,471)	(8,471)
Total net shareholders' funds		27,335	12,687
TOTAL LIABILITIES AND SHAREHOLDERS' FUNDS		29,920	15,272



# PRO FORMA HISTORICAL STATEMENT OF CASH FLOWS

The following table summarises the actual audited historical statement of cash flows of Neuren Pharmaceuticals Limited for the 6 month period ended 30 June 2004 and the financial years ended 31 December 2003 and 2002 respectively. The table reflects the combined historical audited results of Neuren Pharmaceuticals Limited and of NeuronZ Limited. Neuren Pharmaceuticals Limited acquired the assets, liabilities and business as a going concern of NeuronZ Limited with effect from 1 January 2004. Items adjusted from the audited historical results to reflect the business of Neuren Pharmaceuticals Limited on the completion of the capital raising that is subject to this prospectus are shown in note 4.

NOTE	"POST LISTING" PRO-FORMA 30 JUNE 2004 NZ\$000's	6 MONTHS TO 30 JUNE 2004 NZ\$000's	12 MONTHS TO 31 DECEMBER 2003 NZ\$000's	12 MONTHS TO 31 DECEMBER 2002 NZ\$000's
Cash Flows from Operating Activities				
Receipts from customers and grants	1,114	1,114	3,573	770
Receipts from sale of technology	0	0	0	6,700
Payments to suppliers and employees	(3,185)	(3,185)	(9,135)	(13,369)
Interest received	5	5	215	316
Net Cash (used in)/provided by				
Operating Activities	(2,066)	(2,066)	(5,347)	(5,583)
Cash Flows from Investment Activities				
Proceeds from disposal of property, plant & equipment	540	540	0	0
Payments for property, plant & equipment	(14)	(14)	(241)	(807)
Net Cash used in Investing Activities	526	526	(241)	(807)
Cash Flows from Financing Activities				
Proceeds from share issues 3	15,045	397	658	9,126
Net Cash provided by Financing Activities	15,045	397	658	9,126
Net (decrease)/increase in Cash held	13,505	(1,143)	(4,930)	2,736
Cash at the beginning of the financial Year/Period	1,516	1,516	6,468	3,773
Effect of exchange rate changes on cash	(11)	(11)	(22)	(41)
Cash at the end of the Financial Period/Year 4	15,010	362	1,516	6,468

# NOTES TO THE PRO FORMA FINANCIAL INFORMATION

### 1. SIGNIFICANT ACCOUNTING POLICIES

The pro forma financial information for Neuren Pharmaceuticals Limited are based on the general principles of historical cost accounting. They are presented in accordance with the New Zealand Companies Act 1993 and have been prepared in accordance with the New Zealand Financial Reporting Act 1993, in conformity with generally accepted accounting practice in New Zealand.

### DIFFERENCE BETWEEN AUSTRALIAN AND NEW ZEALAND ACCOUNTING STANDARDS

As a New Zealand domiciled company, the historical financial information contained in this section of the prospectus has been prepared in accordance with the New Zealand Companies Act 1993 and the New Zealand Financial Reporting Act 1993, and are in conformity with generally accepted accounting practice in New Zealand, including New Zealand Accounting Standards.

The Directors are of the opinion that the measurement and recognition requirements of Australian Accounting Standards are not materially different to those adopted by the Company in the preparation of the historical financial information contained in this section of the prospectus.



### INTERNATIONAL ACCOUNTING STANDARDS NOTE

Adoption of International Accounting Standards as the basis for the preparation of financial statements for companies domiciled in New Zealand is planned to be first introduced for the financial years commencing on or after 1 January 2007. This is the earliest date at which the Company intends to adopt International Accounting Standards, unless otherwise required to do so. As such, the Directors have not conducted an analysis of the financial affect the adoption of International Accounting Standards will have on the financial reporting of the company.

It is further noted that the New Zealand Financial Standards Reporting Board has not completed its adoption of International Accounting Standards, and as such the Directors believe that there is not a stable platform from which to conduct any analysis.

### REVENUE

#### Goods and services

Revenue comprises the amounts received and receivable for goods and services supplied to customers in the ordinary course of business.

#### Science Contracts

Where science projects are recognised on an individual project basis and span more than one year, the percentage completion method is used to determine the appropriate amount of revenue to recognise in a given year over the life of the project. Contract revenue is recognised when earned and non-refundable and when there are no future obligations pursuant to the revenue, in accordance with the contract terms. The full amount of an anticipated loss, including that relating to future work on the contract, is recognised as soon as it is foreseen.

### Grants

Grants received are recognised in the statement of financial performance when the requirements under the grant agreement have been met. Any grants for which the requirements under the grant agreement have not been completed are carried as liabilities until all the conditions have been fulfilled.

#### Investment income

Dividend income is recognised in the year the dividend is declared. Interest and rental income are accounted for as earned.

### **Estimates**

The preparation of financial statements in conformity with generally accepted accounting practice requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting year. Actual results may differ from those estimates.

#### Goods and services tax (GST)

The financial statements have been prepared so that all components are presented exclusive of GST. All items in the statement of financial position are presented net of GST, with the exception of receivables and payables, which include GST invoiced.

### Translation of foreign currency

The financial statements are expressed in New Zealand dollars, the functional currency of the Company. Transactions denominated in a foreign currency are converted to New Zealand dollars at the exchange rates in effect at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies arising from operations are translated into New Zealand dollars using closing exchange rates in effect at year end. Gains and losses due to exchange rate fluctuations on these items are included in the statement of financial performance.



### RESEARCH AND DEVELOPMENT

Research costs include direct and directly attributable overhead expenses for drug discovery and research and pre-clinical trials. Research costs are expensed as incurred.

When a project reaches the stage where it is reasonably certain that future expenditure can be recovered through the process or products produced, development expenditure is recognised as a development asset when:

- > a product or process is clearly defined and the costs attributable to the product or process can be identified separately and measured reliably;
- > the technical feasibility of the product or process can be demonstrated;
- > the existence of a market for the product or process can be demonstrated and the Company intends to produce and market the product or process;
- > adequate resources exist, or their availability can be reasonably demonstrated to complete the project and market the product or process.

In such cases the asset is amortised from the commencement of commercial production of the product to which it relates on a straight-line basis over the year of expected benefit. Research and development costs are otherwise expensed as incurred.

#### INTELLECTUAL PROPERTY

Costs in relation to protection and maintenance of intellectual property are expensed as incurred unless the project has yet to be recognised as commenced, in which case the expense is deferred and recognised as contract work in progress until the revenues and costs associated with the project are recognised.

#### TAXATION

The tax expense recognised for the year is based on the accounting surplus, adjusted for permanent differences between accounting and tax rules.

The impact of all timing differences between accounting and tax income is recognised as a deferred tax liability or asset. This is the comprehensive basis for the calculation of deferred tax under the liability method.

A deferred tax asset, or the effect of losses carried forward that exceed the deferred tax liability, is recognised in the financial statements only where there is virtual certainty that the benefit of the timing differences, or losses, will be utilised. No tax asset is recognised in the financial statements for the period ended 30 June 2004.

#### IMPAIRMENT

The Company reviews long-lived assets, including intangible assets, whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. The carrying amount of a long-lived asset is considered impaired when the estimated undiscounted cashflow from such asset is less than its carrying value. In that event, a loss is recognised in the statement of financial performance based on the amount by which the carrying amount exceeds the fair market value of the long-lived asset. Fair market value is determined using the anticipated cashflows discounted at a rate commensurate with the risk involved.

### CASH AND CASH EQUIVALENTS

Cash and cash equivalents comprises cash and demand deposits held with established financial institutions and highly liquid investments, which are readily convertible into cash and have maturities of three months or less.

### ACCOUNTS RECEIVABLE

Accounts receivable are carried at estimated realisable value after providing against debts where collection is doubtful.

### CONTRACT WORK IN PROGRESS

Contract work in progress is stated at cost less amounts invoiced to customers. Cost includes all expenses directly related to specific contracts and an allocation of general science overhead expenses incurred by the Company.



### PLANT AND EQUIPMENT

Property, plant and equipment are recorded at cost. Depreciation is determined principally on a straight-line basis for plant, equipment and office furniture and fittings, based upon the following estimated useful lives:

Scientific equipment	4 years
Computer equipment	2 years
Office furniture, fixtures & fittings	4 years
Leasehold Improvements	Term of lease

Repairs and maintenance and gains and losses on sale or disposal of assets are reflected in the statement of financial performance as incurred. Major renewals and betterments are capitalised.

### **INTANGIBLE ASSETS**

Patents, trademarks and licences are amortised over their anticipated useful lives, which are aligned with the unexpired patent term or agreement over trademarks and licences.

### EMPLOYEE ENTITLEMENTS

Employee entitlements to salaries and wages, annual leave, long service leave and other benefits are recognised when they accrue to employees. The liability for employee entitlements is carried at the present value of the estimated future cash outflow.

### FINANCING COSTS

Costs associated with the issue of shares which are recognised in shareholders' equity are treated as a reduction of the amount collected per share. Costs associated with the issue of shares which are recognised within non-current liabilities on the balance sheet are expensed in the year accrued.

### FINANCIAL INSTRUMENTS

Financial instruments recognised in the statement of financial position include cash and cash equivalents, accounts receivable, accounts payable and redeemable preference shares. With the exception of the redeemable preference shares, the Company believes that the amounts reported for financing instruments approximate fair value due to their short term nature. There are no unrecognised financial instruments. The Company does not undertake hedging activities or utilise derivative financial instruments.

The Company has no exposure to credit risk.

### STATEMENT OF CASHFLOWS

Operating cashflows include all transactions and other events that are not investing or financing activities. Investing activities are those activities relating to the acquisition, holding and disposal of property, plant and equipment, and investments. Financing activities are those that result in changes in the size and composition of the capital structure disclosed within equity or long term debt.

### 2. ADJUSTMENTS TO PRO FORMA HISTORICAL STATEMENT OF FINANCIAL PERFORMANCE

In order to present historical results on a basis consistent with the ongoing business of Neuren Pharmaceuticals Limited as contemplated in the Prospectus, the combined historical results of Neuren Pharmaceuticals Limited and NeuronZ Limited have been adjusted. Adjustments have been made to eliminate foreign exchange fluctuations and accrued interest charges arising from preference shares previously held. Transactions between the entities have also been eliminated.

	6 MONTHS TO 30 JUNE 2004 NZ\$000's	12 MONTHS TO 31 DECEMBER 2003 NZ\$000's	12 MONTHS TO 31 DECEMBER 2002 NZ\$000's
Combined Loss After Tax as audited	(2,946)	(4,736)	(3,874)
Eliminate foreign exchange effects of preference shares			
held in NeuronZ Limited denominated in US\$	0	(3,242)	(3,552)
Add back preference share dividend charged			
but not paid and not recurring	126	1,524	1,552
Pro forma Combined Loss After Tax	(2,820)	(6,454)	(5,874)



### 3. "POST LISTING" PRO FORMA STATEMENT OF FINANCIAL POSITION

The historical actual statement of financial position is compiled from the audited interim financial statements of Neuren Pharmaceuticals Limited for the 6 month period ended 30 June 2004. These financial statements include the assets, liabilities and business of NeuronZ Limited with effect from 1 January 2004.

The "Post Listing" Pro forma statement of financial position incorporates the historical actual statement of financial position as at 30 June 2004 with the following transactions as if those transactions had taken place as at 30 June 2004:

- > The issue of 37,500,000 Ordinary Shares at A\$0.40 each in Neuren Pharmaceuticals Limited raising a total of A\$15,000,000 or NZ\$16,387,500 ;
- > Estimated issue costs of A\$1,590,000 or NZ\$1,740,000 incurred against the issue of 37,500,000 Ordinary Shares in Neuren Pharmaceuticals Limited.

	30 JUNE 2004 NZ\$000's	
Cash held as per historical actual Statement of Financial Position		
as at 30 June 2004	362	
Issue of 37,500,000 Ordinary Shares on or after 10 December 2004	16,388	
Estimated costs of issue of 37,500,000 Ordinary Shares	(1,740)	
	15,010	

### 4. ADJUSTMENTS TO PRO FORMA HISTORICAL STATEMENT OF CASH FLOWS

In order to present historical results on a basis consistent with the ongoing business of Neuren Pharmaceuticals Limited as contemplated in the prospectus, the combined historical results of Neuren Pharmaceuticals Limited and NeuronZ Limited have been adjusted. Adjustments have been made to eliminate transactions between the entities effecting cash flow disclosures.

6	6 MONTHS TO 30 JUNE 2004 NZ\$000's	12 MONTHS TO 31 DECEMBER 2003 NZ\$000's	12 MONTHS TO 31 DECEMBER 2002 NZ\$000's
Combined cash at the end of Financial Period/Year			
As audited	362	1,516	6,468
Eliminate receipt from technology sale in NeuronZ Limited			
within operating activities	0	(490)	0
Eliminate expense of technology purchase in Neuren Pharmaceuticals Limite	d		
within operating activities	0	90	0
within investing activities	0	400	0
Pro forma Combined cash at the end of the Financial Period/Year	362	1,516	6,468



### 5. INTANGIBLE ASSETS

	6 MONTHS TO 30 JUNE 2004 NZ\$000's	
Intellectual Property acquired:		
Cost:		
Patent Rights	12,446	
Less accumulated amortisation:		
Patent Rights	415	
Intangible assets, net book value	12,031	

The patent rights were acquired as a result of the acquisition of the assets, liabilities and business as a going concern of NeuronZ Limited. The patent rights have been valued by the Directors at a valuation which reflects fair value as at 1 January 2004 based upon the historical costs associated with the technology. The patent rights are amortised over a period of 15 years from the effective date of acquisition being 1 January 2004 as this reflects the approximate unexpired patent term.



### **SECTION 12**

# **RISK FACTORS**

## **General Risk Factors**

A range of risk factors may affect the operating and financial performance of Neuren. While some risks can be mitigated by the Company's plans and actions, many are beyond the control of Neuren. As a consequence of these risks, the Company's share price may rise or fall.

It is for this reason that investment in Neuren should be regarded as speculative, and neither the Company nor its Directors or advisors provide any guarantee that profitability will be achieved, or with respect to the payment of dividends, return of capital or market value.

Applicants for shares in Neuren should carefully consider the risk factors set out below, as well as the other information contained in this Prospectus. If you are in doubt regarding the terms and conditions of this Prospectus you should consult your stockbroker or other professional adviser.

General risks include:

SHARE MARKET RISKS Potential investors should recognise that the prices of shares fall as well as rise. Many factors affect the price of shares including local and international stock markets, movements in interest rates, economic and political conditions and investor and consumer sentiment.

INVESTMENT RISKS GENERALLY Risks of a general nature relating to investment in shares and securities generally and especially where the company in which the investment is made has a small market capitalisation.

FISCAL RISKS These involve the imposition of additional taxes, imposts and other charges by government from time to time relating to revenue or cash flow. Industry profitability can be affected by changes in tax policies, the interpretation and application thereof.

FOREIGN CURRENCY RISK The underlying currency in which the Company's revenues and costs are denominated primarily in New Zealand dollars, but also in US dollars and Australian dollars. The currency which the Company currently reports in is New Zealand dollars because this is its functional currency. The fact that the Company has a portion of its revenues and costs denominated in a currency other than its functional currency can and has created gains or losses arising from foreign exchange translations.

The share price of the Company will be denominated in Australian dollars. Should there be a significant divergence between the New Zealand dollar and the Australian dollar after the Offer, the share price performance could be positively or negatively impacted by such a significant divergence alone.

MACRO-ECONOMIC AND POLITICAL FACTORS Apart from exchange risks there are a wide range of other macroeconomic and political factors beyond the control of the Company which may affect the Company's operations including the consequences of terrorist and other activities which themselves impact adversely on the global economy and share market conditions and share prices generally.

POLITICAL AND OTHER FACTORS Factors such as changes in levels of consumer confidence affect consumption patterns and consequently demand for a wide range of products.



# Specific Risk Factors

Investors should be aware that an investment in Neuren involves many risks, which may be higher than the risks associated with an investment in other companies. Intending Applicants should read the whole of this Prospectus in order to fully appreciate such matters and the manner in which Neuren intends to operate before any decision is made to subscribe for Shares.

Applicants should be aware that there are risks associated with any share investment. The prices at which the Company's Shares trade may be above or below the issue price under this Prospectus. The trading price of Shares is likely to be highly volatile and could be subject to wide fluctuations in response to factors such as additions or departures of key personnel, litigation, newspaper and other media reports, results of the Company's clinical trial programmes, actual or anticipated variations in the Company's operating result or new products or services offered by the Company or its competitors.

The Shares allotted under this Prospectus carry no guarantee in respect of profitability, dividends, return of capital, or the price at which they may trade on the ASX.

The securities offered under this Prospectus should be regarded as speculative. Biotechnology research and development has inherent risks, which may have a material effect on the Company's future performance and the value of its securities. Investors should consider whether the speculative securities offered by this Prospectus are a suitable investment having regard to their own individual investment objectives, financial circumstances, and the risk factors set out below. This list is not exhaustive and, if in any doubt, investors should consult their professional advisers before deciding whether to apply for securities pursuant to this Prospectus.

RELIANCE ON KEY PERSONNEL The Company currently employs a number of key management and scientific personnel, and in part the Company's future depends on retaining and attracting suitably qualified personnel. The Company maintains a Share Option Plan, the details of which are shown in Section 13 of this Prospectus, which is aimed at providing incentives and assisting in the recruitment and retention of key personnel. However, the existence of the Plan will not guarantee that the Company will be able to attract and maintain suitable qualified personnel, and failure to do so could materially adversely affect the business, operating results and financial prospects.

CONTRACT RISKS GENERALLY The Company will operate through a series of contractual relationships with licencers, sub-licencees, independent contractors, distributors, customers and suppliers. All contracts carry risks associated with the performance by the parties thereto of their obligations as to time and quality of work performed.

RISK AS TO TECHNICAL CAPACITY The Company intends to carry out development work using appropriately chosen scientific research organisations. As such, it will be subject to the risk that staff in those organisations may have greater or lesser technical capacity than needed to achieve the results sought to be obtained from any development programme. No development programme is thus under the sole control of the Company. If, for any reason, incompetent staff in any such organisation carry out research then the results sought to be obtained may not be obtained or results apparently obtained may be inaccurate as a result of flawed research or development.

INTELLECTUAL PROPERTY AND PROPRIETARY RIGHTS The Company regards the content of certain of its technology as proprietary and relies primarily on a combination of copyright, patent and trade secrecy laws and employee and third party non-disclosure agreements to protect its rights. Those steps may, however, not be adequate to fully protect those rights. No assurances can be given that employees and/or third parties will not breach non-disclosure agreements or infringe or misappropriate the Company's rights. Further, no assurance can be given that others will not challenge the ownership or validity of those proprietary rights by attacking either the Company or patent holders from whom the Company has acquired licences. In addition, effective copyright and patent protection may be unavailable or limited in certain countries.

Litigation may be necessary from time to time to enforce and protect the Company's rights. Such litigation can be costly and could have adverse effects on its activities, business, operating results and financial position. Likewise, a failure to succeed in protecting any such rights may equally have a materially adverse effect on the Company's activities, business, operating results and financial position.



It is possible that other parties may assert intellectual property infringement, unfair competition or like claims against the Company under copyright, trade secret, patent or other laws. While the Company is not aware of any claims of this nature in relation to any of the intellectual property rights in which it has interests, such claims, if made, may harm, directly and indirectly, the Company's business. If the Company is forced to defend against claims of intellectual property infringement, whether they are with or without merit or are determined in the Company's favour, the Company might face costly litigation and diversion of management's attention. As a result of such disputes, the Company may have to develop non-infringing technology or enter into royalty or licensing agreements. Such agreements, if necessary, may be unavailable on terms acceptable to the Company and it is unable to develop non-infringing technology or content on a timely basis, it could harm the Company's business, operations and financial condition.

TECHNOLOGICAL DEVELOPMENT The Company's future success will depend in no small part on the Company's abilities to develop products that are able to compete in a global marketplace. No assurance can be given that the Company's research and development activities will lead to the development of such products.

COMPETITION Neuren's current and potential future competitors might include companies with significantly greater resources than Neuren. These competitors may develop products or services that are more effective and/or cheaper than those being developed by Neuren, and as a consequence Neuren's products or services may become uncompetitive, resulting in adverse affects on revenue, margins and profitability.

PRODUCT DEVELOPMENT There are many risks inherent in the development of biotechnology products. They are subject to failure during clinical trials or may fail to achieve sufficient robustness and reliability. The Company cannot guarantee that the development work being undertaken will result in the development of any products, or even if they do, that those products will be commercially successful.

PRODUCT LIABILITY The Company has no product liability insurance at this stage. The question of product liability will be dealt with more comprehensively as and when products, which may give rise to claims, are introduced to the market, whether by the Company or by any of its licensees.

SUFFICIENCY OF FUNDING The Company will have limited financial resources and may need to raise additional funds from time to time. Any such fundraisings will be subject to factors beyond the control of the Company and its Directors and will include cyclical factors affecting the economy and share markets generally.

LITIGATION The Company is not presently involved in litigation and the Directors are not aware of any basis on which any litigation against the Company may arise.

REGULATORY RISKS Operations by the Company may require approvals from regulatory authorities which may not be forthcoming or which may not be able to be obtained on terms acceptable to the Company. While the Company has no reason to believe that all requisite approvals will not be forthcoming, Applicants should be aware that the Company cannot guarantee that any requisite approvals will be obtained. A failure to obtain any approvals would mean that the ability of the Company to develop or operate any project may be limited or restricted either in part or absolutely.

RISK AS TO PROFITABILITY The ability of the Company to pay dividends will depend on it generating revenue and then deriving sufficient after-tax profits to be able to do so. The Company is not presently profitable and it may not at any time be so.

NO VALUATION No formal or informal valuation has been completed of the intellectual property or assets of the Company. The Company makes no representation as to the value of its intellectual property. All investors and their advisers should make their own assessments as to these matters after having regard to all of the information contained in this Prospectus.

GENERALLY The possibility exists that, for a wide range of reasons, the Company's present strategies, plans, policies, intentions and expectations may not be able to be implemented.



### **SECTION 13**

# ADDITIONAL INFORMATION

# 13.1 Incorporation and Registration as Foreign Company

The Company was incorporated in New Zealand on 17 December 2001 as EndocrinZ Ltd. The Company subsequently changed its name to Neuren Pharmaceuticals Limited on 2 June 2004. The Company was registered as a foreign company carrying on business in Australia under Part 5B.2 of the Corporations Act and given ARBN 111 496 130 on 22 October 2004.

The Company has three subsidiaries. AgVentures Limited and Neuroendocrinz Limited are New Zealand incorporated companies that are dormant and have not traded since incorporation. NeuronZ Biosciences Inc., was incorporated on 20 August 2002 in Maryland, USA and its name was subsequently changed to Neuren Pharmaceuticals Inc. in May 2004.

## 13.2 Share Capital

The number of Shares and Options issued by the Company is set out in Section 1 above and the profile of the holders of those Shares and Options is set out in Section 2 above.

### HISTORY OF SHARES

On 17 December 2001, the Company issued 50 Class A shares to Oceania & Eastern Biotech Limited and 50 Class A shares to New Zealand Seed Fund Management Limited for a consideration of NZ\$1.00 per Class A share. On 15 January 2002, the Company issued 630,000 Shares to EndocrinZ Founders Limited and a further 210,000 Shares in total to four founder scientists. Each Share was issued for consideration of NZ\$0.01 per Share.

On 5 March 2002, the Company reclassified the Class A shares as Series A Preference shares and issued a further 833,283 Series A Preference shares to Oceania & Eastern Biotech Limited and 833,284 Series A Preference shares to New Zealand Seed Fund Management Limited, for a consideration of NZ\$1.00 per Series A Preference share. On 5 March 2002, the Company also issued 2,500,000 Series B Preference shares to the Pfizer Group for a consideration of NZ\$1.86 per Series B share.

On 2 April 2004, the Company converted all its Series A Preference shares and Series B Preference shares then on issue into Shares on a one for one basis. In addition, as consideration for the holders of the Series A and Series B Preference shares forgoing their preferential rights, the Company issued 120,364 Shares to Oceania & Eastern Biotech Limited, 120,365 Shares to New Zealand Seed Fund Management Limited and 671,489 Shares to the Pfizer Group.

On 21 May 2004, the Company issued 16,276,939 Shares to NeuronZ as consideration for the acquisition of the assets, liabilities and business as a going concern of NeuronZ (see Section 13.7.2 of this Prospectus for further details of this transaction).

On 30 June 2004, the Company issued 1,831,750 Shares to its existing Shareholders at NZ\$1.00 per Share and also made a private placement of 500,000 Shares to Savage Group Limited for a consideration of NZ\$1.00 per Share.

On 29 October 2004, the Company registered the transfer of 11,431,900 Shares from NeuronZ to the shareholders of NeuronZ pursuant to a share buy back arrangement in NeuronZ.

On 2 November 2004, the Company subdivided its Shares on a ratio of approximately 2.5482 Shares after the subdivision for every 1 Share before the subdivision. Accordingly, before the subdivision, the Company had 24,527,574 Shares on issue and after the subdivision, the Company had 62,500,000 Shares on issue.



### HISTORY OF OPTIONS

Oceania & Eastern Biotech Limited is an investment company associated with interests of Dr Robin Congreve. In consideration for the provision by Oceania & Eastern Biotech Limited of services in relation to, *inter alia*, the acquisition of the assets, business and liabilities of NeuronZ Limited and the Company's capital raising initiatives, the Company granted Oceania & Eastern Biotech Limited 600,000 Options on 1 October 2004 ("O&E Options"). The number of O&E Options were adjusted to 1,528,892 Options as a consequence of the subdivision of Shares described above.

If the O&E Options are exercised, the consideration for the issue of the Shares will be a fixed sum of NZ\$600,000 payable by Oceania & Eastern Biotech Limited on the exercise of the Options – equivalent to NZ\$0.392 per Share. The options must be exercised on or before 31 March 2009.

Auckland UniServices Limited ("UniServices") is the commercial research and knowledge transfer company for New Zealand's largest university, the University of Auckland. In consideration for the entry into a Research Deed dated 5 March 2002 between the Company and UniServices, the Company granted UniServices 735,000 Options ("UniServices Options"). The number of UniServices Options were adjusted to 1,872,892 Options as a consequence of the subdivision of Shares described above.

If the UniServices Options are exercised, the consideration for the issue of the Shares will be a fixed sum of NZ\$735,000 payable by UniServices on the exercise of the Options – equivalent to NZ\$0.392 per Share. The UniServices Options must be exercised at any time up to the earlier of two years following the termination of the Research Deed (or any further such deed entered into between the Company and UniServices Limited) and 31 March 2009. Both the O&E Options and the UniServices Options were otherwise issued on terms and conditions not materially different to those of the Share Option Plan described in Section 13.10 below. The Company intends to issue further Options before the Closing Date of the Offer in accordance with the terms of the Share Option Plan.

## 13.3 Restriction Periods

As described in Section 3 above, it is anticipated that the ASX will require certain Shareholders and Optionholders to enter into restriction agreements. In anticipation of this, these Shareholders and Optionholders will enter into restriction agreements for periods ranging from 12 to 24 months on the terms the Company believes the ASX will impose. In addition, the Company has sought that its substantial Shareholders and Optionholders enter into voluntary restriction agreements for a period of 12 months (to the extent not subject otherwise to ASX mandated restriction).

Altogether, Shareholders who own 99.6% of all Shares prior to the Offer, and Optionholders who own 80.6% of all Options will enter into restriction agreements with respect to their Shares and Options.

The terms of the restriction agreements prohibit a Shareholder or Optionholder (subject to certain limited exceptions) from:

- > disposing of, or agreeing or offering to dispose of, the Shares or Options;
- > creating, or agreeing or offering to create, any security interest in the Shares or Options; and
- > doing, or omitting to do, any act if the act or omission would have the effect of transferring effective ownership or control of the Shares or Options.

# 13.4 Rights and liabilities attaching to Shares

The Shares are fully paid ordinary shares and are all of the same class and rank equally in every respect. Set out below is a summary of some of the principal rights of Shareholders pursuant to the Constitution of the Company. It does not purport to constitute an exhaustive or definitive statement of the rights and liabilities of the Shareholders. Investors are accordingly encouraged to inspect the Constitution.

The rights and liabilities attaching to the Shares are also regulated by the New Zealand Companies Act, 1993 (Companies Act), the general law and the Listing Rules.



### MEETING OF SHAREHOLDERS

Each Shareholder is entitled to receive a notice of and attend and vote at general meetings of the Company and to receive all notices, reports and financial statements required to be sent to Shareholders under the Constitution, the Companies Act, the Listing Rules or other requirements.

The Company may serve a notice on the Shareholder either personally, by sending it by post addressed to the Shareholder's registered address or to the Shareholder's email address.

### **VOTING RIGHTS**

At a general meeting, subject to any special privileges or restrictions as to voting for the time being attached to any special class of shares, on a show of hands every member present in person or by proxy has one vote. On a poll, each member present in person or by proxy will have one vote for every Share which that member holds or represents. No member will be entitled, in respect of shares held by that member, to exercise voting rights or to form part of any quorum by virtue of his or her holding such shares if any call or other sum presently payable by that member to the Company in respect of such shares remains unpaid.

Subject to the Companies Act, the general law and the Listing Rules, in the case of equality of votes, whether on a show of hands by voice or on a poll, the Chairman of that Shareholders' meeting is not entitled to a second or casting vote.

### **DIVIDEND RIGHTS**

The Directors, in accordance with the Companies Act, may declare dividends.

Unless and to the extent that the rights attached to any shares or the terms of issue thereof otherwise provide, all dividends will (as regards any shares not fully paid throughout the period in respect of which the dividend is paid) be apportioned and paid pro rata according to the amount paid on the shares during any portion or portions of the period in respect of which the dividend is paid. For this purpose, no amount paid on a share in advance of calls will be treated as paid on the share.

### TRANSFER OF SHARES

Shares may be transferred electronically (by an electronic transfer system approved by any statute of New Zealand) or by instrument in the following manner:

- > for authorised or stock exchange transactions, in a form complying with the Securities Transfer Act 1991 (NZ) and any stock exchange upon which the Company may be listed; or
- > for all other transfers, as approved by the Directors and any stock exchange upon which the Company may be listed.

There will be no restriction on the transfer of Shares except where:

- > required by law, the listing rules of any stock exchange upon which the Shares may be listed; or
- > where the Board in its discretion granted by the Constitution refuses to transfer the Shares.

CHESS is an electronic system for the transfer and settlement of shares, which is approved under New Zealand law. For more details about CHESS see Section 3.

### **ISSUE OF FURTHER SHARES**

Subject to the Companies Act, the Listing Rules and any special rights previously conferred on the holders of any existing shares or class of shares, the Directors may issue shares at any time without the prior approval of the Company in a general meeting, to any persons on such terms and conditions and for such consideration and at such time and on such payment terms as the Directors may think fit.

Any shares may be issued in such denomination or with such preferential, deferred, qualified or special rights, privileges, conditions or restrictions or limitations including as to distributions, voting rights and ranking as the Directors may think fit.



### PREFERENCE SHARES

Preference shares may be issued which are or at the option of the Company are liable to be redeemed, the terms and manner of redemption being determined by the Directors, provided always that the rights attaching to other existing classes of shares will not be affected except where specifically provided by the terms of issue of any existing share. The Company is entitled to create and issue preference shares. The rights which are attached to preference shares may include a preferential right to dividends and certain priorities on redemption of shares and in a winding up.

### VARIATION OF RIGHTS

The issue of shares ranking equally with or in priority to any existing shares will not affect the rights of the existing shares unless specifically provided for in the terms of issue of those existing shares.

### WINDING UP

If the Company is wound up (whether the liquidation is voluntary, under supervision, or by the court) the liquidator may, with the authority of a special resolution or any other sanction required by the Companies Act, divide among the members in kind the whole or any part of the assets of the Company and whether or not the assets will consist of property of the same or different kinds, and may for such purpose set such value as the liquidator deems fair upon any of the property to be divided as aforesaid and may determine how such division will be carried out as between the members or different classes of members.

The liquidator may, with the approval of the Company by special resolution, vest the whole or any part of the assets in trustees upon such trusts for the benefit of members as the liquidator with the approval of the Company by special resolution will think fit, and the Company dissolved, but so that no contributory will be compelled to accept any shares or other property in respect of which there is a liability.

### SHARE BUY BACKS

The Company may buy Shares in itself on the terms and at the times determined by the Board, to extent and in the manner permitted by the listing rules of any stock exchange upon which the shares of the Company may be listed and the Companies Act.

### COMPLIANCE WITH ASX LISTING RULES

The Constitution was amended on 4 October 2004 to incorporate Appendix 15A of the Listing Rules. Accordingly, if the Company is admitted to the Official List, the following applies:

- > Notwithstanding anything contained in the Constitution, if the Listing Rules prohibit an act being done, the act shall not be done.
- > Nothing contained in the Constitution prevent an act being done that the Listing Rules require to be done.
- > If the Listing Rules require an act to be done or not to be done, authority is given for that act to be done or not to be done (as the case may be).
- > If the Listing Rules require the Constitution to contain a provision and it does not contain such a provision, the Constitution is deemed to contain that provision.
- > If the Listing Rules require the Constitution not to contain a provision and it contains such a provision the Constitution is deemed not to contain that provision.
- > If any provision of the Constitution is or becomes inconsistent with the Listing Rules, the Constitution is deemed not to contain that provision to the extent of the inconsistency.

### NUMBER OF DIRECTORS

The number of Directors, other than alternate directors, will not be less than 3 or more than 9 or such other number as is fixed by an ordinary resolution of the Company. At least 2 Directors of the Company must be ordinarily resident in New Zealand.



### APPOINTMENT AND REMOVAL OF DIRECTORS

Subject to the Constitution, the Board or the Company by ordinary resolution may appoint any person as a Director either to fill a casual vacancy or as an additional Director.

The Listing Rules require that the Company hold an election of Directors by ordinary resolution each year. The Directors, other than a managing director, must not hold office (without re-election) past the third annual general meeting following the Director's appointment or 3 years, whichever is longer. However, a director appointed to fill a casual vacancy or as an addition to the board must not hold office (without re-election) past the next annual general meeting.

The Company may by ordinary resolution, subject to the Constitution, from time to time remove any Director before the expiration of his or her period of office and appoint another person in their place.

### HOLDING OF SHARES

Directors are not required under the Constitution to hold any Shares in the Company.

### MEETING OF DIRECTORS

The Board may meet together for the despatch of business, adjourn or otherwise regulate meetings and proceedings as it thinks fit. A Director may participate at a meeting of Directors by an instantaneous telecommunications device.

A resolution in writing signed or assented to in writing by each Director and constituting a quorum shall be effective as a resolution passed at a meeting of Directors duly convened and held.

Questions arising at any meeting of the Directors will be determined by a majority of votes. In case of an equality of votes the Chairman of the meeting will not have a second or casting vote.

### 13.5 Constitution

The full rights and liabilities attaching to ownership of the Shares are detailed in the Constitution of the Company ("Constitution"), which may be inspected during business hours at the offices of Gadens Lawyers at Level 13, 77 Castlereagh Street, Sydney NSW 2000.

# 13.6 Remuneration of Directors

The payment of remuneration and other benefits to Directors may be determined from time to time by the Board and in accordance with the Act and the Listing Rules.

Directors shall be entitled to be paid reasonable travelling, hotel, entertaining and other expenses incurred in attendance at meetings of the Board, a committee or of the Company or when engaged in the business or affairs of the Company. In addition, the Directors are also entitled to an expense allowance of such a sum as the Board considers reasonable for each day or part of a day where the Director is absent from his or her usual place of residence in the execution of such duties.

The Board may authorise the payment of special remuneration to a Non-Executive Director who is or has been engaged by the Company to carry out any services which is, in the opinion of the Board, work not in the capacity of a Director.

Under the Listing Rules, the maximum fee payable to Directors, except executive Directors, may not be increased without prior approval from the Company at general meeting. Non-executive Directors must be paid a fixed sum – the Board has set the amount payable to non-executive Directors in aggregate at NZ\$400,000 p.a. Presently, each non-executive Director is paid NZ\$25,000 per year for being a Board member. Further, each committee member is paid an additional NZ\$10,000, with the Chair of each committee receiving an additional NZ\$5,000.

The terms of engagement of the Company's Managing Director, Mr David Clarke are described in Section 13.7.6 below. The terms of engagement of Dr Doug Wilson as a consultant are described in Section 13.7.8 below.

The Listing Rules prohibit a Director's salary or fees including a commission on, or a percentage of, operating revenue.



# 13.7 Material Contracts

With the exception of the contracts summarised below and described elsewhere in this Prospectus, the Directors believe that there are no material contracts that need to be brought to the attention of potential investors.

The summaries below are, of their nature, brief and indicative only and should be read on that basis.

### **13.7.1 UNDERWRITING AGREEMENT**

The Company entered into an underwriting agreement with Emerging Growth Capital Pty Limited (Underwriter) on 15 November 2004.

The Underwriter agrees to underwrite the Offer. The Company agrees to pay the Underwriter:

- > a Management Fee of A\$225,000; and
- > an Underwriter's Commission of A\$712,500.

The Underwriter agrees to rebate half the retainer fee, which is capped at A\$80,000, upon payment of the Management Fee and the Underwriter's Commission.

In addition, the Company agrees to pay:

- > advertising the Prospectus to such extent and in such form and manner as the Underwriter may reasonably require;
- > all out of pocket expenses of the Underwriter up to a maximum of A\$25,000; and
- > stamp duty, if any, on the agreement and allotment of the underwritten shares.

The Company also agrees to pay the Underwriter's legal fees, capped at A\$25,000 to the date of lodgement.

The Underwriter has the right to nominate allottees for the New Shares.

The Underwriter may immediately terminate the agreement upon the occurrence of any one or more of the following events:

(a) lodgement: the lodgement of the Prospectus with ASIC has not occurred on or prior to 15 November 2004;

(b) lodge agreed form: the Company lodges the Prospectus with ASIC in a form not agreed by the Underwriter;

(c) ASIC Stop Order: ASIC gives notice of its intention to hold a hearing in relation to the Prospectus under section 739(2) of the Corporations Act or makes an order under sections 739(1), 739(3) or 739(4) of the Corporations Act or the New Zealand Securities Commission gives a notice or makes an order under similar provisions of any applicable New Zealand companies or securities legislation;

(d) changes of law: any law, bill or other measure is introduced or announced by the Government of Australia, the Government of any Australian State or Territory, or any responsible Minister of any such Government, or any policies are adopted or announced by the Reserve Bank of Australia or any other relevant fiscal authority (whether or not in Australia) or the United States of America, New Zealand or the European Economic Community adopts a policy, which has or might in the reasonable opinion of the Underwriter have a material adverse effect on the prospects of the Offer being fully subscribed prior to the Closing Date;

(e) commencement of hostilities: hostilities are commenced (whether war is declared or not) involving all or any of the Commonwealth of Australia, New Zealand, the United Kingdom, the United States of America, the Republic of Indonesia, the Commonwealth of Independent States (or any successor union or if there is not such successor union, then the Republic of Russia), any former members of the USSR, the Peoples Republic of China or Japan or hostilities are renewed in the Persian Gulf between sovereign nations, other than hostilities between members of the Commonwealth of Independent States;

(f) directors: any director or proposed director of the Company dies or is charged with or convicted of any indictable criminal offence;

(g) breach: the Company commits or permits any breach or default of any provisions of the underwriting agreement and, if capable of being remedied, fails to remedy the breach or default within five (5) Business Days of the Underwriter serving written notice on the Company requiring the breach or default to be remedied;



(h) misstatement in the Prospectus: there is a misstatement or inaccuracy in the Prospectus or omission from the Prospectus or any statement in the Prospectus including but not limited to any representation with respect to any future matter is or becomes false or misleading;

(i) Insolvency Event: an insolvency event occurs with respect to the Company or any Subsidiary;

(j) Admission to ASX: permission is not granted for the Company to be admitted to the Official List within the period referred to in section 724(1)(b) of the Corporations Act or, if the permission is granted, the permission is subsequently withdrawn, gualified on a basis not acceptable to the Underwriter or withheld or the underwritten Shares are not approved for quotation by ASX during the abovementioned period or, if the approval is granted, the approval is subsequently withdrawn, gualified on a basis not acceptable to the Underwriter or withheld;

(k) No quotation: the ASX makes an official statement or indicates to the Company or the Underwriter that:

(1) the Company will not be admitted to the Official List; or

(2) the approval of ASX to admit the Company to the Official List will not be given or will be given on conditions that are not acceptable to the directors or the Underwriter, acting reasonably;

(I) movement in the All Ordinaries Index: at any time after 12 November 2004 and before the Closing Date, the All Ordinaries Index of ASX falls to a level that is ten per cent (10%) or less of the level attained at the close of trading on the Business Day immediately preceding 12 November 2004 and maintains that level or less for a period of three consecutive days;

(m) contravention by the Company: the Company or any subsidiary or any Director, proposed Director or officer of the Company or any subsidiary contravenes any material provision of the Corporations Act, Listing Rules and like laws;

(n) adverse change: in the opinion of the Underwriter there is an adverse change or a development involving a prospective adverse change occurs in the financial or trading position of the Company or any of its subsidiaries;

(o) breach of constitution: the Company or any of it subsidiaries contravenes any of the provisions of their constitutions:

(p) unapproved alteration: the Company or any of its subsidiaries alters its board of directors or its capital structure or its constitution without the prior written consent of the Underwriter;

(q) adverse change: in the opinion of the Underwriter there is an adverse change in relation to the principal business activities of the Company or any of its subsidiaries or in any of the principal projects or businesses of the Company or any of its subsidiaries which is or are referred to in the Prospectus including, without limiting the generality of the forgoing, if any adverse order is made by an environmental agency in relation to the Company or any of its subsidiaries or any site occupied by the Company or any of its subsidiaries;

(r) certificate: the Certificate (if required) by the Company certifying certain matters is not given in accordance with the underwriting agreement or, if so given, is or becomes incorrect in whole or in part;

(s) material contract: without the prior written consent of the Underwriter, a material contract (other than the underwriting agreement) referred to in the Prospectus is terminated (whether by breach or otherwise), rescinded, altered or materially amended or if any such contract is rendered void or voidable or liable to be terminated;

(t) interest rate: after 12 November 2004 and before the Closing Date there is an 80 basis points rise in the 90 day bank bill rate from that rate as published in the Australian Financial Review on the Business Day immediately preceding 12 November 2004:

(u) Encumbrances: other than encumbrances proposed to be entered into and disclosed to the Underwriter prior to 12 November 2004 or encumbrances created with the prior written approval of the Underwriter, an encumbrance over all or any of the assets of the Company or of any of its subsidiaries is created or comes into existence;

(v) false or misleading information given to the Underwriter: any information supplied by the Company or any of its subsidiaries or any person on its behalf to the Underwriter or its employees or agents in respect of the Offer or the Prospectus is or becomes false or misleading;

(w) false or misleading information associated with Due Diligence Programme: any of the results of investigations of the Company and of any of its subsidiaries conducted in pursuance of the Due Diligence Programme is or becomes materially false or misleading;



(x) ASIC hearing: any application is made by ASIC for any order under section 1324A or section 1324B of the Corporations Act in relation to the Prospectus;

(y) ASIC Prosecution: ASIC gives notice of an intention to prosecute the Company, any director or employee of the Company, or any Subsidiary of the Company or any of its Related Bodies Corporate, unless ASIC withdraws that intention in writing on or before the Closing Date;

(z) Court Order: an order is made in connection with the Prospectus including under section 1324 and 1325 of the Corporations Act;

(aa) significant change or new matter: there occurs in relation to the Prospectus an event which, in the opinion of the Underwriter, constitutes a matter referred to in section 719 of the Corporations Act, unless pursuant to the Corporations Act, in the absolute discretion of the Underwriter, the matter is not or not reasonably likely to become materially adverse from the point of view of an investor;

**(bb) timely lodgement of supplementary prospectus:** if the Underwriter does not terminate this Agreement under paragraph (aa), the Company fails for any reason to lodge a supplementary Prospectus or replacement Prospectus in such form and within such time as the Underwriter reasonably requires;

(cc) compliance with section 710 of the Corporations Act: the Prospectus does not contain, having regard to the matters set out in section 710 of the Corporations Act, all such information as investors and their professional advisers would reasonably require for the purpose of making an informed assessment of the matters referred to in section 710 of the Corporations Act;

(dd) withdrawal of consent: any person who has previously consented to the inclusion of his, her or its name in the Prospectus (other than the Underwriter) withdraws that consent;

**(ee) natural disaster:** before the Closing Date there is a natural disaster on the North Island of New Zealand or in the metropolitan areas of Sydney, Melbourne or Brisbane which, in the reasonable opinion of the Underwriter is likely to have a material adverse affect on the operations of the Company or any of its subsidiaries; or

(ff) public statements: without the prior written approval of the Underwriter, a public statement is made by the Company or any of its subsidiaries, or any director, proposed director, officer, employee, agent or adviser of any of the foregoing in relation to the Offer or the Prospectus.

If the Underwriter terminates the underwriting agreement, the Company is not obliged to pay either the Underwriting Commission or the Management Fee but the Company remains liable for all fees, expenses and charges.

If the Underwriter exercises any of its termination rights after 22 November 2004, the Underwriter will, if necessary, advise ASX immediately.

Notwithstanding anything expressed or implied in the underwriting agreement, the occurrence of any of the termination events listed above does not entitle the Underwriter to exercise its termination rights unless in the reasonable opinion of the Underwriter, such event has or is likely to have an adverse effect on the Offer or could give rise to a liability on the part of the Underwriter under the Corporations Act, the Listing Rules and other like laws.

### 13.7.2 MERGER BETWEEN THE COMPANY AND NEURONZ

On 21 May 2004 the Company entered into an agreement with NeuronZ entitled Agreement for Sale and Purchase of Business (**Merger Agreement**). Settlement occurred on 31 May 2004 and the agreement has effect from 1 January 2004. The Merger Agreement was conditional on it being approved by the shareholders of NeuronZ, which occurred on 21 May 2004.

Under the Merger Agreement, the Company agreed to purchase from NeuronZ all of the assets, liabilities and "Business" operations as a going concern. This included all NeuronZ's intellectual property, whether or not in a material form. "Business" is defined as the business of biotechnology research and development in the fields of neurological disease as carried on by NeuronZ.

The consideration paid by the Company to NeuronZ was the issue of 16,276,939 Shares, representing approximately 73.3% of the ordinary shares in the Company at the time of settlement.



NeuronZ has the right to request and receive any information reasonably required by them regarding the affairs of the Company's business. NeuronZ also has the right to disclose such information to their shareholders, provided that their shareholders treat the information as confidential.

Upon settlement, the Company assumed all of NeuronZ's obligations and liabilities in relation to the Business, including all agreements (and leases) relating to NeuronZ's business, effective on and from 1 January 2004. NeuronZ also assigned to the Company all rights it had under and against other parties to the agreements (and leases) relating to the Business, effective on and from 1 January 2004.

The Company indemnifies NeuronZ against all costs, offers, claims, liabilities, proceedings, damages and expenses incurred and any loss or damage suffered by NeuronZ by reason of, or in any connection with, any obligation under any of the assumed liabilities.

# 13.7.3 RELATIONSHIP WITH AUCKLAND UNISERVICES LIMITED, THE UNIVERSITY OF AUCKLAND AND THE LIGGINS INSTITUTE

The Company has a number of contractual arrangements with Auckland UniServices Limited, the University of Auckland and the University of Auckland's Liggins Institute. In addition, UniServices holds 2,219,000 NeuronZ shares or 67.2% of NeuronZ. In turn, NeuronZ owns 12,345,898 Shares or 19.8% of the Company prior to the Offer. In an agreement dated 13 October 2004 between NeuronZ, Neuren, UniServices and the University of Auckland, the parties agreed to transfer the intellectual property rights and responsibility for research from NeuronZ to Neuren.

### **RESEARCH DEED**

The Company entered into a deed with UniServices dated 13 October 2004, entitled 'Research Deed' with a term commencing on 1 January 2004 and ending on 31 December 2007. Neuren and UniServices wish to collaborate on a funded research program using the facilities and staff of the Liggins Institute and the University of Auckland, with a project description to be agreed for each specific research project. Research projects with a planned duration of more than 3 months must have an agreed fixed price. Neuren owns all right, title and interest in all intellectual property arising from research.

The Company shall procure its research requirements to a value of no less than NZ\$2.5 million for each of the 4 calendar years from 1 January 2004 until 31 December 2007 from UniServices pursuant to the Research Deed. However, if the Company fails to comply with this obligation, UniServices will have no claim or action against the Company.

The Company solely owns all right, title and interest to any and all results of the research. Additionally, the Company has a first right to take a licence on commercial terms from UniServices for any intellectual property developed at the Liggins Institute in the fields of operation of the Company arising from research funded by public good sources. The Company's first right is for 120 days from when the intellectual property is disclosed to it by UniServices. If the Company purchases research from UniServices to a value of not less than NZ\$2.5 million during the year the intellectual property is disclosed, UniServices will grant a royalty free licence of the intellectual property to the Company. In all other cases, the Company will pay agreed royalties of NZ\$50,000 upon execution of the licence agreement and 1% of all net sales of products or services, However, in the event that the Company purchased from UniServices, the Company must pay UniServices 20% of any consideration it is entitled to, other than royalties on net sales, but minus direct costs for development of results and patent costs. In addition, the Company agrees to enter into agreements, in line with arrangements adopted by companies similar to the Company, with any staff or contractor of UniServices or the University of Auckland that is responsible for developing intellectual property out of research funded by public good sources. At the date of this Prospectus, the Company is not party to any licence agreements on the terms specified above.

The Company, at its sole discretion, may terminate a research project if it is commercially unreasonable. In addition, either party may terminate, by giving notice in writing, a research project because of significant technical difficulties. However, the Company and UniServices must attempt diligently and in good faith for a period of at least 30 days to redeploy the personnel and assets to another research project. The terminating party remains responsible to the other party for expenses related to the terminated research project that the other party is committed to incur, cannot avoid or mitigate, or cannot be redeployed to another research project. Either party may terminate the Research Deed with immediate effect by written notice for material breach of the terms of the Research Deed and failure to continue its principal business, whether by insolvency or otherwise.



### CONTRACT RESEARCH SERVICES

UniServices provides contract research services to the Company for specific research projects pursuant to the overarching Research Deed dated 13 October 2004 between the parties and a specific agreement concerning the method, budget, staffing, resources and materials, reporting and study protocol. Such services are at arms length and on commercially agreed terms.

It is the intention of the Company to purchase research services from the University of Auckland in the order of NZ\$2.5 million in each of the years 2005 through 2007 pursuant to the Research Deed.

### 13.7.4 RELATIONSHIP WITH PFIZER GROUP

The Company has a number of contractual agreements with the Pfizer Group. In addition, the Pfizer Group holds 8,081,438 Shares or 12.9% of the Company before the Offer.

#### LICENSE AGREEMENT

On 5 March 2002 the Company entered into an agreement with an entity in the Pfizer Group, entitled 'License Agreement'.

The License Agreement refers to a number of agreements in which the Company agreed to provide research services to the Pfizer Group for specified research projects, the research for which has been completed.

The Company assigns all of its rights, title and interests in the intellectual property arising out of the research to the Pfizer Group. Under the License Agreement, the Pfizer Group agrees to pay the Company a royalty on net sales of products resulting from several of those research projects, with no royalties payable in respect of others. The Company does not presently receive any royalties under this agreement.

### PRE-CLINICAL STUDIES AGREEMENT

On 9 January 2003, the Company entered into an agreement with an entity in the Pfizer Group, entitled 'Pre-clinical Studies Agreement'. The Company agreed to perform contract research, in accordance with agreed protocols, to be completed on or before 31 December 2004. The Pfizer Group has sole title and rights to the intellectual property. However, the Company may use the intellectual property for internal research purposes.

The consideration payable comprises part of the revenue recorded by the Company in its 2002 and 2003 financial years. In addition, the Company will receive milestone payments if a drug: enters Phase II trials; enters Phase III trials; or obtains regulatory approval in North America, Europe or Japan. The Company has not, as at the date of this Prospectus, received any milestone payments under this agreement.

### AGREEMENT

On 2 April 2004, the Company entered into an agreement with an entity in the Pfizer Group, entitled 'Agreement' with an effective date of 1 January 2004. The parties agree that all research activities to be carried out under the License Agreement dated 5 March 2002 have been completed. The parties agree that the Clinical Study Agreement and the Pre-Clinical Studies Agreement dated 9 January 2003 will continue according to their terms.

Pursuant to the terms of this agreement, the Company presented to the Pfizer Group a detailed review of some of the results of its research activities. The Pfizer Group has the exclusive option until 30 December 2004 to enter into negotiations with the Company to obtain an exclusive licence to any intellectual property disclosed by the Company in its review.

The parties agree to form a Joint Scientific Advisory Committee to facilitate scientific discussions between the parties. It is comprised of at least 2 representatives of each party and a party may terminate its participation at any time without reason.

### CONTRACT RESEARCH SERVICES

The Company provides contract research services to the Pfizer Group for specific research projects in accordance with agreed protocols. The contracts for research services entered into in the 2004 calendar year that continue into the 2005 calendar year amount to the total value of approximately NZ\$675,000. The Company has no interest in the intellectual property created under the current contract research agreements with the Pfizer Group. The Company has sub-contracted its obligations under the current contract research agreements to the Liggins Institute.



### 13.7.5 RELATIONSHIP WITH US SUBSIDIARY

On 11 May 2004, the Company entered into an agreement with its wholly owned subsidiary, Neuren Pharmaceuticals Inc., in which the Company engaged Neuren Pharmaceuticals Inc. to manage business development activities in the United States, including leading fundraising activities.

The Company indemnifies Neuren Pharmaceuticals Inc. on a full indemnity basis against all costs, charges, losses, damages, expenses, penalties and liabilities of any kind (including legal costs) incurred by Neuren Pharmaceuticals Inc. arising out of performance of its duties under the agreement.

Both the Company and Neuren Pharmaceuticals Inc. are entitled at any time to terminate the agreement upon 90 days written notice to the other.

The agreement continues until the earlier of its termination by the Company or Neuren Pharmaceuticals Inc., or one year from 11 May 2004

### 13.7.6 AGREEMENT WITH MANAGING DIRECTOR DAVID CLARKE

Mr Clarke entered into an employment contract with the Company with an effective date of 1 January 2003. Under the contract, Mr Clarke receives an annual salary of NZ\$300,000, with a performance bonus available each year of up to NZ\$150,000 subject to key performance indicators set annually by the Board. In addition, Mr Clarke will be allotted 4,241,888 Options under the Share Option Plan exercisable at NZ\$0.392 per Share and to be accepted by Mr Clarke before the Closing Date.

The contract may be terminated with 3 months notice by either party. Mr Clarke is entitled to 6 weeks annual leave per year and statutory entitlements with respect to public holidays and sick and bereavement leave.

The employment contract contains otherwise standard terms with regard to confidentiality and time spent attending to the Company's business.

### 13.7.7 AGREEMENTS WITH PROFESSOR PETER GLUCKMAN

As part of the establishment of EndocrinZ, the Company entered into an agreement with UniServices under which UniServices procures the consulting services of Professor Gluckman to the Company in the field of endocrinology. The Company reimburses the University for 30% of Professor Gluckman's time as an employee, and he is available to the Company for up to 150 hours in each calendar year.

This agreement runs from 1 February 2002 to 31 January 2007. It is terminable on 3 months notice or on the termination between any agreement between Professor Gluckman and the University.

Following the acquisition of the NeuronZ business by Neuren, the Company entered into a consultancy agreement with Brodie Technology Limited, a party related to Professor Gluckman, effective 1 January 2004. This agreement provides for research services to be provided by Professor Gluckman in the fields of neuroprotection, neurodegeneration, growth and metabolism. It is terminable upon 3 months notice by either party and provides that fees of NZ\$225 per hour (plus GST) for up to 12 hours per week will be payable. A performance bonus of NZ\$40,000 (plus GST) may be payable by the Company dependent on the achievement of objectives as determined by the Board.

Upon termination of the agreement, a 6 month restraint will apply to Professor Gluckman on a world-wide basis in relation to the relevant research fields. This restraint may be extended by the Company for a further period of 18 months, namely maximum 24 months, upon payment by the Company of a maximum of NZ\$150,000.

In the case of both the above agreements all intellectual property arising from Professor Gluckman's work in the fields is owned by the Company. Any other intellectual property arising from work within the Liggins Institute remains the property of UniServices.

### 13.7.8 AGREEMENT WITH DR DOUG WILSON

The Company appointed Dr Wilson for a period of 3 years with effect from 17 June 2004 to provide strategic advice with respect to the Company's development programmes for NZ\$2,000 per day. The Company envisages that the total level of strategic advice will remain within the Board approved levels for Dr Wilson being an independent Director. Dr Wilson has received NZ\$54,000 for providing consulting services from 1 January 2004 until 2 November 2004.



### 13.7.9 AGREEMENT WITH RESPECT TO PROFESSOR MARGARET BRIMBLE

The Company entered into an agreement with UniServices on 4 May 2004 that is effective from 1 January 2004 to 31 December 2005. Under the agreement, UniServices will conduct a research project (**Research**), for which Professor Margaret Brimble is the Principal Investigator. The Research will consist of process development in relation to the eventual scale-up and synthesis of selected analogues. Professor Brimble will provide her services for up to 40% on a full time basis.

The Company will pay UniServices NZ\$462,000 plus GST over the term of the agreement plus consumables and other operating costs which are estimated to be around NZ\$150,000 plus GST.

All intellectual property in inventions or discoveries arising from the Research is the sole property of the Company and is subject to the Research Deed dated 13 October 2004 described in Section 13.7.3 above.

Either party can terminate the agreement within 30 days of sending written notice that the other party has breached a material term of the agreement, provided that the breach remains unremedied at the end of the 30 day period. The Company must pay all of UniServices' costs that were accrued at the date of termination, including non-cancellable obligations after making adjustments for costs against the advance payment of consumables. The Company will not have to pay for non-cancellable obligations if termination of the agreement is a result of an unremedied material breach by UniServices.

Each party indemnifies the other against all liability, loss, expenses, claims and damages that arise out of performance of the agreement, with the exception of indirect or consequential loss caused or resulting from the negligent or intentional acts or omissions of a party's officers, employees and agents.

UniServices' total liability to the Company will not exceed the total amount payable under the agreement.

### 13.7.10 PHASE I CLINICAL TRIALS

The Company entered into a Biostudy Agreement with CMAX of the Institute of Drug Technology Australia Limited (**CMAX**) on 22 June 2004, for the purpose of CMAX conducting Phase I human clinical trials as described in Section 5 above. CMAX is obliged to conduct the Phase I human clinical trials in accordance with a protocol approved by the Company, CMAX, the relevant Institutional Ethics Committee and, if appropriate the Therapeutic Goods Administration. The Phase I clinical trials have been conducted and the Company is obliged to make further payments of approximately A\$167,000 in total, exclusive of GST, if any, on or before CMAX providing the final clinical report. The Company indemnifies CMAX from any loss or damage suffered by CMAX as a result of:

- > injuries suffered or death sustained by persons as a result of the conduct of the Phase I clinical trials;
- > infringement of third party intellectual property rights or other rights persons as a result of the conduct of the Phase I clinical trials; and
- > breach of the agreement.

The above indemnity does not apply to claims:

- > to the extent they are caused by negligent or wrongful acts or omissions of CMAX;
- > to the extent caused by the failure of CMAX to conduct the Biostudy strictly in accordance with the approved protocol; and
- > unless CMAX notifies the Company in writing as soon as reasonably practicable following notice of a claim.

The Company owns the intellectual property created by CMAX for the purposes of the Phase I clinical trials relating to Glypromate<sup>®</sup>. CMAX owns the intellectual property to the methodology and processes created by CMAX in the conduct of the Phase I clinical trials.



### 13.7.11 GOVERNMENT RESEARCH GRANTS

# Grant from the Foundation for Research Science and Technology New Zealand for Brain Rescue Micropump

The Company was assigned the rights and obligations of NeuronZ under a grant issued on 1 July 2004 by the Foundation for Research Science and Technology New Zealand (Foundation), for the purpose of developing and testing a single-use implantable micropump system to administer drugs to enhance recovery in stroke victims. There are 2 key objectives:

- > Recovery-enhancing treatment in rat stroke model efficacy of drug; and
- > System for development and testing of safety and dependability of implantable micropump for stroke.

The grant specifies numerous research-oriented milestones together with a number of outputs and objective specific tangible outcomes, including publication and patent protection.

The grant commences on 1 July 2004 and concludes on 30 June 2008, with a total amount of NZ\$3,257,096 payable over this period monthly in advance by the Foundation to Neuren. An indicative total amount of NZ\$840,000 is payable by the Company to University of Auckland as a sub-contractor over the period of the agreement.

An additional total amount of NZ\$337,500 is payable to the Company, by way of a contribution to the overall project, by a third party over the contract period.

The Company is required to report annually on its progress in a defined manner. The agreement will be reviewed mid-term on requirements to be advised.

The grant makes no provision for the Foundation to have any interest in the intellectual property developed from the research.

### Grant from the Foundation for Research Science and Technology New Zealand for Integrated Therapeutic Peptide Development Platform

The Company signed an Offer Letter from the Foundation dated 22 December 2003, for the purpose of establishing an Integrated Therapeutic Peptide Development Platform.

The agreement commences on 1 January 2004 and concludes on 31 December 2005, with a total amount of \$525,704.00 (inclusive of GST) payable by the Foundation to the Company on a cost recovery basis over this period.

The Offer Letter makes no provision for the Foundation to have any interest in the intellectual property developed from the research.

### 13.7.12 RESEARCH SUPPLY AGREEMENT WITH IMBCOM PTY LIMITED

The Company entered into an agreement with IMBcom Pty Limited (**IMBcom**) on 9 April 2003, for the purpose of IMBcom producing 20 human growth hormone analogs and establishing their properties and therapeutic efficacy.

The agreement commenced on 9 April 2004 and concludes on the earlier of 8 April 2006 or the date on which IMBcom provides the final project report to the Company, with a total amount of A\$500,000 (excluding GST, if any) payable over this period by the Company to IMBcom. The Company will pay an additional A\$50,000 upon the first filing of a patent application relating to this project as well as a royalty of either:

> 1% of amounts received by the Company from net sales; or

> 3% of any payment received by the Company arising from a licence agreement.

The Company owns all intellectual property created during the project in the synthesis, design and study of the 20 growth hormone analogs, the subject of the agreement.

### 13.7.13 RESEARCH AGREEMENT WITH METABOLIC PHARMACEUTICALS

The Company entered into a research agreement on 31 May 2004 with Metabolic Pharmaceuticals Limited (**Metabolic**), for the purpose of the Company conducting stipulated contract research for Metabolic using experimental materials provided by Metabolic.



The effective date of the agreement is 10 May 2004, with a 6 month term, with a total amount of NZ\$519,469 (exclusive of GST, if any) payable over this period by Metabolic to the Company. Professor Peter Gluckman is the Principal Investigator in the study.

Metabolic may terminate the agreement on 2 months notice, for whatsoever reason, and is then liable to pay all costs incurred by the Company as at the date of termination. Metabolic owns all intellectual property in respect of the materials supplied by Metabolic. The Company owns all intellectual property in respect of testing methods.

Both parties continue to have benefits and obligations under this agreement.

### 13.7.14 CHEMO DYNAMICS

On 10 August 2004, Neuren Pharmaceuticals Inc. entered into a Manufacturing Agreement with Chemo Dynamics L.P. (**Chemo Dynamics**). Chemo Dynamics is obligated to ensure that Neuren Pharmaceuticals Inc. has an uninterrupted supply of NNZ-2566 from 25 March 1999 and ending on the fifth anniversary of the date Neuren obtains marketing approval from the FDA for NNZ-2566.

Attached to the Manufacturing Agreement is a Quality Agreement, which describes the guiding principles for the parties to manage all quality aspects for the production of NNZ-2566.

Neuren grants Chemo Dynamics a non-exclusive, non-transferable licence to use improvements to NZ-2566 or its manufacture that are discovered by Chemo Dynamics, but only after the later of the expiry of all US and European patents, 5 years from FDA approval, and 2 years after Chemo Dynamics ceased supplying at least 65% of synthesised NNZ-2566 to Neuren.

Neuren Pharmaceuticals Inc. is a wholly owned US-incorporated subsidiary of the Company – please see Sections 13.1 and 13.7.5 for further details.

### 13.7.15 LEASE OF PREMISES

The Company (sublessee) entered into a sublease with The University of Auckland (sublessor), commencing on 21 November 2000 and terminating on 18 November 2006. There is currently no option to renew the lease.

The sublease relates to 25% of the premises at 2-6 Park Avenue Grafton, Auckland.

The annual rent payable under the sublease currently is NZ\$300,000 pa (excluding GST), and is required to be paid in equal monthly instalments of NZ\$25,000. This amount includes costs associated with maintenance and utilities, housekeeping, security, use of car parking space and fitout and alteration.

## 13.8 Other Research Agreements

# 13.8.1 COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT AND MATERIAL TRANSFER AGREEMENT

Contractor:	The Walter Reed Army Institute of Research (Walter Reed).	
Amount:	\$Nil	
Term:	Agreement can be terminated unilaterally at any time by either party giving written notice.	
Topic:	Walter Reed to perform "proof of principle" experimental testing in rats of NZ 2566 and Glypromate®.	

### 13.8.2 SPONSORED RESEARCH AGREEMENT

Contractor:	The University of Texas Health Science Center at Houston (University of Texas).
Amount:	Approximately US\$63,000 payable to the University of Texas.
Term:	15 June 2004 to 1 November 2004. Both parties continue to have benefits and obligations under this agreement.
Tonic	University of Texas to conduct research on effect of administering to rats Glypromate® alone and in

Topic: University of Texas to conduct research on effect of administering to rats Glypromate<sup>®</sup> alone and in combination with a substance proprietary to the University of Texas.



### 13.8.3 LETTER OF INTENT

Contractor: The Duke Clinical Research Institute ("Duke")

Amount:	US\$50,000
Term:	Letter dated 5 November 2004.

Topic: To fund clinical trial preparations concerning a study to be conducted examining coronary artery bypass patients. It is intended that Duke will provide study design, protocol development, physician and project leadership under the terms of a further agreement, a Clinical Research Agreement.

# 13.9 Litigation

As at the date of this Prospectus, neither the Company nor any of its subsidiaries are involved in any legal proceedings and the Directors are not aware of any legal proceedings pending or threatened against the Company or any of its subsidiaries. or circumstances reasonably likely to result in legal proceedings being taken against the Company or any of its subsidiaries.

# 13.10 Share Option Plan

The Company has established a Share Option Plan to assist in the retention and motivation of senior employees of, and certain consultants to, the Company ("Participants").

### **OPTION ISSUES**

Under the Share Option Plan, Options may be offered to Participants by the Remuneration and Audit Committee. The total number of Options to be offered under the Share Option Plan is 14,139,627 Options of which 14,085,843 Options, subject to acceptance by Participants, will be issued and allocated before the Closing Date of the Offer. No payment is required for the grant of Options under the Share Option Plan.

Subject to any adjustments referred to below, each Option is an Option to subscribe for one Share. Upon the exercise of an Option by a Participant, each Share issued will rank equally with other Shares of the Company. Options issued under the Share Option Plan may not be transferred unless the Remuneration and Audit Committee determines otherwise. The Company does not intend to apply for the Options to be quoted on the ASX.

### ADJUSTMENTS

Subject to the Listing Rules, if between the issue date and the exercise date in respect of any Option:

- (a) the Company makes or announces any bonus issue of Shares or other securities, or makes or announces any rights issue, or other offer to holders of Shares to take up Shares or other securities;
- (b) any consolidation or subdivision of Shares, share buyback, amalgamation, or other reconstruction of or adjustment to the Shares or the share structure of the Company, of any nature whatsoever, occurs or is announced; or
- (c) any offer is made for the acquisition of Shares;

the Company may make such arrangements, or alterations to the terms of Options as are necessary to ensure that so far as possible after the occurrence of the event referred to in paragraphs (a), (b) or (c) above, Participants and the Company are left in the same overall economic position as if that event had not occurred. Such arrangements or alterations may without limitation include adjustments to the number of Shares to be issued upon exercise of Options, permitting Participants to exercise Options earlier than would otherwise have been the case, or arranging for Participants to participate in any offer or issue of securities made by the Company. No such arrangement or alteration shall be made if that arrangement or alteration would cause a breach of the Listing Rules.

### VESTING OF OPTIONS

Options issued under the Share Option Plan will vest once the period of time and other conditions (if any) determined by the Remuneration and Audit Committee at the time of offer of the Options are satisfied.


#### EXERCISE PRICE

The exercise price for each Option on issue, as to be issued before the Closing Date, is approximately NZ\$0.392.

#### LAPSE OF OPTIONS

Each Option shall lapse and cease to be available for exercise after 31 March 2009 or where the Participant who is the holder of that Option ceases to be an employee or consultant, provided that the Company may, subject to such conditions as it sees fit, determine that Options held by a Participant who has:

- > ceased to be an employee or consultant by reason of injury, ill health, redundancy, or retirement shall not lapse;
- > died shall not lapse and may be transferred to a personal representative of that Participant.

### 13.11 Corporate Governance Policies

The Directors have adopted practices and procedures for the corporate governance of the Company. These practices and procedures establish the framework of how the Directors carry out their duties and discharge their obligations.

#### 13.11.1 STRUCTURE AND COMPOSITION OF THE BOARD

The Company must have between 3 and 9 Directors. The usual term of appointment for non-executive Directors is 3 years.

The Board currently consists of a non-executive Chairman, a Managing Director, and 3 non-executive Directors. The composition of the Board and the independence of Directors are regularly reviewed to ensure that the Board has the appropriate mix of independence, expertise and experience. The Board has considered establishing a Nomination Committee. However, due to the small number of Directors the Board considers it more efficient for the selection and appointment of Directors to be considered by the Board itself.

It is the Board's policy to determine the terms and conditions relating to the appointment and retirement of non-executive Directors on a case by case basis and in conformity with the requirements of the Listing Rules. The Board may also engage an external consultant where appropriate to identify and assess suitable candidates who meet the Board's specifications.

### **BOARD FUNCTIONS**

The Board is responsible for the overall corporate governance of the Company. The Board acts on behalf of and is accountable to, the Shareholders. The Board seeks to identify the expectations of Shareholders as well as other regulatory and ethical expectations and obligations. The Board is responsible for identifying areas of significant business risk and ensuring mechanisms are in place to manage those risks adequately. In addition, the Board sets the overall strategic goals and objectives, and monitors achievement of goals.

The responsibility for the operation and administration of the Company has been delegated to the Managing Director and senior management. The Board ensures this team is appropriately qualified to discharge their responsibilities.

The Board ensures management's objectives and activities are aligned with the expectations and risks identified by the Board through a number of mechanisms including the following:

- > establishment of the overall strategic direction and leadership of the Company;
- > approving and monitoring the implementation by management of the Company's strategic plan to achieve those objectives;
- > reviewing performance against its stated objectives, by receiving regular management reports on business situation, opportunities and risks;
- > monitoring and review of the Company's controls and systems including those concerned with regulatory matters to ensure statutory compliance and the highest ethical standards; and
- > review and adoption of the annual budget and monitoring the results against stated targets.

The Board reviews its corporate strategy and financial targets in terms of shareholder expectations, performance and potential in the interests of creating long-term value for shareholders.



The Board considers corporate governance to be an important element of its responsibilities. It meets regularly throughout the year.

#### BOARD COMMITTEES GENERALLY

It is the Board's policy that the various Committees it has established should:

- > be entitled to obtain such resources and information from the Company including direct access to employees of and advisers to the Company as it may require; and
- > operate in accordance with the terms of reference established by the Board.

#### REMUNERATION AND AUDIT COMMITTEE

The Remuneration and Audit Committee must have a minimum of 2 non-executive directors. The Committee operates under terms of reference approved by the Board. It is responsible for undertaking a broad review of, ensuring compliance with, and making recommendations in respect of, the Company's internal financial controls, legal compliance obligations and remuneration policies. It is also responsible for:

- > review of audit assessment of the adequacy and effectiveness of internal controls over the Company's accounting and financial reporting systems, including controls over computerised systems;
- > review of the audit plans and recommendations of the external auditors;
- > evaluating the extent to which the planned scope of the audit can be relied upon to detect weaknesses in internal control, fraud and other illegal acts;
- > review of the results of audits, any changes in accounting practices or policies and subsequent effects on the financial statements and make recommendations to management where necessary and appropriate;
- > review of the performance and fees of the external auditor;
- > audit of legal compliance including trade practices, corporations law, occupational health and safety and environmental statutory compliance and, once listed, compliance with the Listing Rules;
- > supervision of special investigations when requested by the Board;
- > setting and reviewing compensation policies and practices of the Company;
- > setting and reviewing remuneration of the Managing Director, Directors and members of the executive team; and
- > setting and reviewing the Company's equity plans for employees and/or Directors.

In undertaking these tasks the Remuneration and Audit Committee meets separately with management and external auditors where required.

#### DIRECTORS' ACCESS TO INDEPENDENT PROFESSIONAL ADVICE

For the purposes of the proper performance of their duties, Directors are entitled to seek independent professional advice at the Company's expense, unless the Board determines otherwise.

#### ADOPTION OF A CONTINUOUS DISCLOSURE PROTOCOL

Once listed, the Company will need to comply with the continuous disclosure requirements as set out in the Listing Rules. The Company will be required to disclose to the ASX any information concerning the Company which a reasonable person would expect to have a material effect on the price or value of securities of the Company, unless certain exemptions from the obligation to disclose apply. To enable it to meet its obligations, the Company will adopt a continuous disclosure protocol and has appointed Mr Robert Waring of Oakhill Hamilton Pty Ltd as Disclosure Officer. The Disclosure Officer will be required to collate and, where appropriate, disclose share price sensitive information.

All relevant information provided to ASX will be immediately posted onto the Company's corporate website www.neurenpharma.com, in compliance with the continuous disclosure requirements of the Listing Rules.

#### IDENTIFICATION AND MANAGEMENT OF SIGNIFICANT BUSINESS RISK

The Board has identified the significant areas of potential business and legal risk for the Company.

The identification, monitoring and, where appropriate, the reduction of significant risk to the Company are monitored by the Board. The Board reviews and monitors the parameters under which such risks will be managed.

The Board has identified the Company's activities in conducting clinical trials into humans as a significant area of risk.



The Board has established the Clinical Development and Ethics Committee to assist the Board in discharging its responsibilities regarding this specific area of risk including ensuring:

- > risk management strategies are in place (such as insurance) and that variances in such strategies are reported;
- > staff involved in this area are sufficiently experienced and skilled;
- > appropriate procedures are in place for the selection and remuneration of external contractors;
- > compliance with regulatory obligations including manufacturing, testing, analysis and FDA/Med Safe and Ethics.

Similar risk management procedures are adopted for other areas of identified risk.

The Remuneration and Audit Committee also assists the Board in its monitoring of financial and operational risk.

Both Committees ensure adequate and timely reporting of their findings and activities to the Board.

#### CONFLICTS OF INTEREST

Directors are required to enter in the Interests Register and disclose to the Board any transaction or proposed transaction in which they have an interest.

#### EQUITY PARTICIPATION BY DIRECTORS

While not compulsory, the Board encourages Directors to own shares in the Company.

#### ETHICAL STANDARDS AND SHARE TRADING

The Company recognises the need for Directors and employees to observe the highest standards of behaviour and business ethics when engaging in corporate activity or Share trading.

The Constitution permits Directors to acquire Shares. The Company's share trading policy prohibits Directors, executives and employees from trading in securities unless trading occurs during a four week period commencing immediately after the announcement to ASX of the half-yearly and annual results and/or after the conclusion of the Company's Annual General Meeting and provided that the person is not in possession of price sensitive information and the trading is not for short-term or speculative gain. Other trading may only occur with Board approval.

#### **RIGHTS OF SHAREHOLDERS**

The Board strives to communicate regularly and clearly with Shareholders. Shareholders are encouraged to attend and participate at general meetings.

### 13.12 Investing in a New Zealand Company

The Company is incorporated in New Zealand and, except to the extent that it is carrying on business in Australia as a registered foreign company, is not generally subject to the Corporations Act 2001. In particular, the Company will not be subject to the provisions of Chapters 6, 6A, 6B and 6C of the Corporations Act 2001 dealing with takeovers. Instead, the Company is subject to New Zealand law including the Companies Act 1993, the Financial Reporting Act 1993, the Securities Markets Act 1988 and the Takeovers Code (SR 2000/210) approved under the Takeovers Act 1993.

The Companies Act 1993, governs such matters as the issue and buy-back of shares by a New Zealand-registered company as well as containing detailed provisions relating to such matters as the provision by a New Zealand registered company of financial assistance for the purpose of or in connection with the purchase of shares issued or to be issued by the company, the powers of shareholders, including the power of shareholders to require a company to buy-back their shares in certain cases, and shareholders' enforcement powers. The Companies Act, 1993 also contains detailed provisions governing the administration of New Zealand-registered companies.

Matters relating to financial reporting by New Zealand registered companies are governed by the Financial Reporting Act 1993 which, in particular, specifies detailed requirements for the preparation of audited annual financial statements by "reporting entities" to which, following completion of the Offer, the Company will be subject.

The Securities Markets Act 1988 includes, in Part 2 of that Act, detailed provisions concerning the disclosure of interests of "substantial security holders" (being persons with a relevant interest in 5% or more of the voting securities) in a "public issuer". Following completion of the Offer, the Company will be a "public issuer" for the purposes of the Act.



The Takeovers Code regulates the conduct of takeovers of a "code company" and will apply to the Company following admission to the official list of the ASX. In particular, the Takeovers Code requires that, unless it is in reliance on one of the exceptions to the so-called fundamental rule under the Takeovers Code, acquisitions which would result in the acquirer holding or controlling more than 20% of the voting rights in a code company (or, in the case of a person already holding or controlling in excess of that 20% threshold, an increased percentage) must be the subject of a takeover offer that complies with the Code. A Code offer, which can be either a full offer or a partial offer, must be made to all holders of voting securities in the code company and must be on the same terms and conditions and provide for the same consideration for all securities belonging to the same class of equity securities under offer. The Takeovers Code also provides compulsory purchase and sale provisions if 90% or more of the voting rights in a code company are acquired (whether by reason of acceptances under a takeover offer or otherwise).

### 13.13 Tax information in relation to a New Zealand company

The following provides a general outline of the Australian and New Zealand income tax implications for an Australian or New Zealand tax resident in respect of acquiring, holding and disposing of shares under this Offer.

The taxation implications of any investment in shares will be dependent upon the investors particular circumstances. The Company recommends each investor seek their own independent income tax advice based on their particular circumstances.

#### TAX RESIDENCY OF THE COMPANY

The Company is incorporated in New Zealand and is a resident of New Zealand for income tax purposes.

#### AUSTRALIAN INVESTORS

An investor that is a resident of Australia for income tax purposes is generally required to included in their assessable income all income derived from all sources whether in or out of Australia for the relevant year of income. This will generally include dividend income and capital gains regardless of the source, subject to any exemptions or concessions that may be available to a particular investor.

#### **Dividend Distributions**

Where the Company pays a dividend to an Australian tax resident shareholder, the dividend should be included in the investor's assessable income for the relevant year of income.

For income tax purposes the dividend received is to be grossed up for any withholding tax deducted in New Zealand for an individual Australian tax resident shareholder. A corresponding foreign tax credit may be available to the shareholder for the New Zealand withholding tax deducted (if any) in relation to the dividend paid.

The amount of the foreign tax credit allowed as a credit for an individual Australian tax resident is limited to the extent of the primary tax payable in the hands of the shareholder in respect of the dividend. The amount of the foreign tax credit to be offset against the shareholders income tax liability is the lesser of:-

(i) the income tax payable on the dividend; or

(ii) the amount of the foreign tax credit.

Where the Company pays a dividend to an Australian tax resident corporate shareholder that holds less than 10% voting interest in the Company, the shareholder should include for income tax purposes the dividend grossed up for any withholding tax deducted in New Zealand. A corresponding foreign tax credit may be available to the shareholder for the New Zealand withholding tax deducted (if any) from the dividend paid.

Where the Company pays a dividend to an Australian tax resident corporate shareholder that holds at least 10% of the voting interest in the Company, the shareholder should qualify for an exemption in respect of the dividend paid by the Company for income tax purposes.

As such, the dividend is exempt from income tax in the shareholders hand. No foreign tax credit is available to a shareholder if the dividend is exempt from income tax. Also, any interest incurred in respect of borrowings to acquire the shares under this offer will be non-deductible for income tax purposes.



#### **Disposal of Shares**

Generally, for many Australian tax resident investors the acquisition of Shares under this offer should be a capital asset and subject to the Capital Gains Tax (CGT) regime.

For CGT purposes, an investor acquires the Shares on the date the Shares are issued or transferred. The cost base of Shares acquired is generally the amount the investor pays to acquire the shares and any associated costs incurred, including, for example, brokerage and stamp duty.

Capital gains derived from the disposal of Shares should be subject to CGT. A capital gain is derived where the proceeds received from the disposal of Shares exceed the cost base. Alternatively, an investor should incur a capital loss where the proceeds received from the disposal of Shares is less than the cost base.

Capital losses derived during the year of income or from prior years carried forward can be used to reduce any capital gains derived. Capital losses can only be offset against capital gains.

Net capital gains are to be included in assessable income of the Australian tax resident investor. The applicable tax payable on the net capital gain will be dependent on the type of investor. An Australian tax resident individual investor will be taxed at their marginal rate after allowing for deductions. Alternatively, an Australia resident company investor will be subject to tax at the corporate rate of 30% of taxable income.

Where an Australian tax resident investor has held the Shares as a capital asset for at least 12 months the capital gain may be reduced by the general CGT discount concession for particular investors. The discount percentage for individual and trusts is 50%, and for complying superannuation funds and life insurance companies 33%. This means generally only 50% (for individuals and trusts) and 67% (complying superannuation funds) of the capital gain is included in the investor's assessable income after the offset of any capital losses. Corporate investors are not eligible for the general CGT discount concession.

In the event that an investor acquires the Shares in the Company as a revenue asset (ie trading stock or for the purpose of profit making) any gain resulting from the disposal of the Shares should be assessable as ordinary income. The general CGT discount concession would not be available for such an investor. Alternatively, any loss resulting from the disposal of the Shares would be a revenue loss which may reduce the assessable income of the investor.

#### NEW ZEALAND INVESTOR

An investor that is a resident of New Zealand for income tax purposes is generally required to include in their gross income all income from all sources for the relevant year of income.

#### **Dividend Distributions**

Where the Company pays a dividend to a New Zealand resident individual or corporate shareholder, the Company should attach imputation credits to that dividend and/or deduct resident withholding tax. The imputation credits and/or resident withholding tax deducted from the dividend must equal the amount of 33% of the gross dividend paid.

A New Zealand resident individual or corporate shareholder receiving a dividend from the Company can claim a corresponding tax credit in their income tax return for any imputation credits attached to the dividend and/or resident withholding tax deducted.

#### **Disposal of shares**

On the disposal of the Shares by a New Zealand tax resident individual or corporate shareholder, the taxation implications will be dependent on the shareholder's particular circumstances.

Generally, the profit from the disposal of Shares by a New Zealand tax resident individual or corporate shareholder should not be taxable.

The profit from the disposal of the Shares by a New Zealand tax resident individual or corporate shareholder shall be taxable if the Share were acquired by a share trader or for the purpose of resale at a profit as ordinary income.

#### NON-RESIDENTS

Non-residents of Australia or New Zealand should consult their own tax advisor to determine the taxation implications of their domestic jurisdiction in respect of this Offer.



# 13.14 Application of Australian Corporations Act

As the Company is an entity established outside Australia, it is not subject to Chapters 6, 6A, 6B and 6C of the Corporations Act dealing with acquisition of Shares (regarding substantial holdings and takeovers).

The Company will give information to the ASX (for release to the market) about ownership of its securities and will:

- > tell the market immediately the Company becomes aware of any person becoming a substantial holder within the meaning of s 671B of the Corporations Act, and disclose any details of the substantial holding of which the Company is aware; and
- > tell the market of subsequent changes in the substantial holdings of which the Company becomes aware.

### 13.15 Governing law

This Prospectus, the Offer and the contracts formed on acceptance of Applications under the Offer are governed by the law applicable in New South Wales, Australia. Each Applicant submits to the exclusive jurisdiction of the Courts of New South Wales, Australia.

### 13.16 Interest of Directors

Other than as set out below, or described elsewhere in this Prospectus, no Director holds, at the date this Prospectus was lodged with the ASIC, or has held in the two years prior to the date of lodgement of this Prospectus, any interest in:

- > the formation or promotion of the Company;
- > property acquired or to be acquired by the Company in connection with:
  - its formation or promotion; or
  - the Offer; or
- > the Offer.

Other than as set out below, or described elsewhere in this Prospectus, no person has paid, or agreed to pay, an amount or give or agreed to give any benefit to a Director, or proposed Director:

- > to induce them to become, or to qualify as, a Director; or
- > for services provided by a Director in connection with:
  - its formation or promotion; or
  - the Offer.

Oceania & Eastern Biotech Ltd has provided advisory services to the Company in relation to the Offer. The Company has agreed to pay Oceania & Eastern Biotech Ltd for those services on a time based charge arrangement. The amount payable by the Company is approximately NZ\$50,000 plus GST. The Company has also issued Options to Oceania & Eastern Biotech Ltd on the terms described in Section 13.2 above. In addition, Dr Congreve is a beneficiary of a trust which holds 3,704,244 Shares and is beneficially entitled to 3,293,711 Shares.

Mr David Clarke will be beneficially entitled to 4,241,888 Options before the Closing Date of the Offer to be issued under the Share Option Plan described in Section 13.10 above and is remunerated pursuant to his employment contract described in Section 13.7.6 above.

Dr Doug Wilson has received NZ\$54,000 for providing consultancy services from 1 January 2004 until 2 November 2004.

Dr Robin Congreve is a director and shareholder of Oceania & Eastern Biotech Ltd, and a director and indirect shareholder of EndocrinZ Founders Limited.



### 13.17 Interest of Experts and Advisers

Except as set out below or described elsewhere in this Prospectus, no:

- > person named in this Prospectus as performing a function in a professional advisory or other capacity in connection with the preparation or distribution of this Prospectus;
- > promoter of the Company or the Group; or
- > financial adviser of the Offer,

holds, at the date this Prospectus was lodged with the ASIC, or has held in the two years prior to the date of lodgment of this Prospectus, any interest in:

- > the formation or promotion of the Company;
- > property acquired or to be acquired by the Company in connection with:
  - its formation or promotion; or
  - the Offer; or
- > the Offer

Gadens Lawyers has acted as Australian legal adviser with respect to the Offer. The Company has paid or agreed to pay Gadens Lawyers A\$75,000 up to the date of this Prospectus for the provision of legal services in connection with the Offer. Should further work be required of Gadens Lawyers which falls outside its agreed scope of work, the Company will pay for those services according to their time based charges.

Emerging Growth Capital Pty Limited has acted as Underwriter and Lead Manager to the Offer. Assuming the Offer is successfully completed, the Company has agreed to pay it up to A\$40,000 as a retainer together with management and underwriting fees of 6.25% of the total amount raised by the Offer together with certain other underwriting expenses specified in the underwriting agreement. (see Section 13.7.1 for a review of the Underwriting Agreement).

Pitcher Partners has acted as independent accountant with respect to the Offer and has been paid approximately A\$15,000 for preparing the Independent Accountants Report which appears in Section 11 of this Prospectus. Should further work be required of Pitcher Partners, those services will be paid for according to their normal time based charges.

PricewaterhouseCoopers (New Zealand) has acted as Auditor to the Company, has provided audit services and has been paid up to NZ\$40,000 for the provision of services in connection with this Offer. Should further work be required of PricewaterhouseCoopers (New Zealand), those services will be paid for according to their normal time based charges.

Simpson Grierson has acted as New Zealand legal adviser to the Company with respect to the Offer. It has provided legal services to the Company in connection with the Offer. The Company has agreed to pay Simpson Grierson NZ\$78,786 up to the date of the Prospectus for the provision of legal services in connection with the Offer.

Aoris Nova Pty Ltd has been paid A\$32,500 for preparing the Independent Science Report which appears in Section 9 of this Prospectus.

Fliesler Meyer LLP is the patent attorney to the Company. It has been paid USD5,000 for preparing the Patent Report which appears in Section 10 of this Prospectus. Should further work be required of Fliesler Meyer LLP, those services will be paid for according to their normal time based charges.

Oceania & Eastern Biotech Ltd has provided advisory services to the Company in relation to the Offer. The Company has agreed to pay Oceania & Eastern Biotech Ltd for those services on a time based charge arrangement. The amount payable by the Company is approximately NZ\$50,000 plus GST.



## 13.18 Expenses of the Offer

The approximate expenses of the Offer to the Company (excluding any applicable GST and reimbursement or out of pocket expenses) are A\$1.59 million (NZ\$1.74 million). These expenses are payable out of the proceeds of the Offer.

Except as set out above or elsewhere in this Prospectus, no sums have been paid or agreed to be paid to any professional adviser or other person in cash, shares or otherwise by any person in connection with the formation or promotion of the Company. Certain parties and employees of the above firms may subscribe for Shares in the Offer.

### 13.19 Working capital statement

The Directors believe that, on completion of the Offer, the Company will have sufficient working capital to carry out its objectives as stated in this Prospectus.

### 13.20 Consents

None of the parties referred to below has made, or purports to have made any statement that is included in this Prospectus or any statement on which a statement made in this Prospectus is based other than as specified below.

Each of the parties referred to below, to the maximum extent permissible by law, expressly disclaims and takes no responsibility for any part of this Prospectus other than the reference to its name and the statement or report included in this Prospectus with the consent of that party as specified below.

Emerging Growth Capital Pty Limited has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

Gadens Lawyers has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

Pitcher Partners has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named and to the inclusion of its Independent Accountants Report in this Prospectus in the form and context in which it appears.

Aoris Nova Pty Ltd has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named and to the inclusion of its Independent Science Report in this Prospectus in the form and context in which it appears.

Fliesler Meyer LLP has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named and to the inclusion of its Patent Report in this Prospectus in the form and context in which it appears.

PricewaterhouseCoopers (New Zealand) has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

Simpson Grierson has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

Oceania & Eastern Biotech Ltd, has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

ASX Perpetual Registrars Limited has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

Barnes Dowell James has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

Oakhill Hamilton Pty Ltd has given and has not, before the lodgement of this Prospectus with ASIC, withdrawn its written consent to being named in this Prospectus in the form and context in which it is named.

Each of the members of the Scientific Advisory Board, namely Professors George Werther, David Dunger, Stewart Gilmour, James Grotta, Ole Isacson and Michael Waters, have given and have not, before the lodgement of this Prospectus with ASIC, withdrawn their written consent to being named in this Prospectus in the form and context in which each is named.



### 13.21 Documents available for Inspection

Copies of the following documents will be available for inspection free of charge at the registered office of the Company for at least 13 months after lodgement of this Prospectus:

- > the written consents to the issue of this Prospectus; and
- > the Constitution of the Company.

### 13.22 Authority of Directors

In the opinion of the Directors, there have not been any circumstances which materially affected or will affect the operating or financial performance or value of the Company since the date of the accounts used in the preparation of the Investigating Accountant's Report, except as disclosed in this Prospectus.

Every Director of the Company has consented to the lodgement of this Prospectus with ASIC under the Corporations Act and this Prospectus has been signed by the Chairman of the Company.

M. Cogu

Dr Robin Congreve Chairman



### **SECTION 14**

# GLOSSARY

**Acute Administration:** "Acute" is a measure of the time scale of a treatment and is in contrast to "subacute" and "chronic". Acute generally means a period of treatment of less than a week. "Subacute" indicates a longer duration of treatment, whilst "Chronic" indicates indefinite duration or treatment.

Acute Injury: The sudden onset of disease or symptoms; for example the onset of a stroke.

Agonist: A drug that mimics the action of a naturally occurring substance.

**Alzheimer's Disease:** A progressive neurodegenerative disease characterised by loss of function and death of nerve cells in several areas of the brain leading to loss of cognitive function such as memory and language. The cause of nerve cell death is unknown. Alzheimer's disease is the most common cause of dementia.

**Antagonist:** A drug or compound that partially or completely blocks the effect of another drug or naturally occurring compound such as a hormone.

Anti-apoptotic agent: A compound that blocks apoptosis.

Anti-coagulant: A chemical which prevents blood from clotting.

Anti-inflammatory agent: A substance which directly reduces the inflammatory response of tissue.

**Anti-oxidant:** A chemical which prevents the abnormal oxidisation of compounds by free radicals released from cells in the body. The anti-oxidant, by reacting with the oxidant, protects cells from being damaged.

**Apoptosis:** A type of regulated cell death in which the cell uses specialised cellular machinery to kill itself. The cell suicide mechanism enables the body to control cell number and eliminate cells that threaten an individual's survival. Also called programmed cell death.

Apoptotic Cascade: A normal regulated series of sequential events in a cell that leads to its death by apoptosis.

**ASIC:** Australian Securities and Investment Commission.

Astrocytes: A type of glial cell in the brain that helps support the neurons.

**ASX:** Australian Stock Exchange Limited.

Axons: Processes of nerve cells (neurons) along which the electrical signal flows to the next nerve cell.

**Bioavailability:** The degree to which a drug or other substance becomes available to the target tissue after administration.

**Bioinformatics:** The organisation and use of biological information, particularly computer-driven processing and analysis of data and databases in the fields of molecular biology and genetics.

Biopharmaceutical: A drug derived by a genetic engineering process or by any other biotechnological means.

**Blood–Brain Barrier:** The barrier system separating the blood from the tissue of the central nervous system. Its anatomical component consists of the cells lining blood vessels having especially tight junctions, which limits the movement of substances in the bloodstream into the brain.

Board: The board of the Company.

Central Nervous System (CNS): The brain and spinal cord.



**Chemoattractive:** Any substance that promotes the migration of brain cells, including neurons, in the brain during development or after damage.

**Choline Acetyl Transferase (ChAT):** An enzyme involved in the production of acetylcholine, which is important in the processing of memory. Reduced activity of ChAT is associated with mild cognitive impairment and Alzheimer's disease.

Chronic Disease: A disease lasting for a long period of time.

**Clinical Trial:** Research conducted with volunteer patients, usually to evaluate a new treatment, under strictly controlled conditions. Each trial is designed to answer scientific questions and to find better ways to treat individuals with a specific disease.

Closing Date: The date the Offer is closed (see page 8).

**Cognitive Impairment:** A deficiency in the ability to think, perceive, reason or remember resulting in loss of the ability to take care of one's daily living needs.

Company or Neuren: Neuren Pharmaceuticals Limited.

Contusion: An injury to a part of the body without a break in the skin and leading to a subcutaneous haemorrhage.

**Coronary Artery Bypass Graft (CABG) surgery:** A surgical procedure which involves replacing diseased (narrowed) coronary arteries with veins obtained from the patient's lower extremities. During this procedure the patient is placed on a heart bypass machine (heart-lung machine) to allow the surgeon adequate time to perform surgery on the resting (non-beating) heart.

Corporations Act: Corporations Act 2001 (Cth).

**Current Good Manufacturing Practice (cGMP):** The regulated manufacturing procedures required to ensure quality and purity of a drug compound during production.

Cytokines: Proteins secreted by cells of the immune system that affect other cells in the immune system.

**Devic's Disease:** A disease causing demyelination of the optic nerve and sometimes the spinal cord. Also called optic neuroencephalomyelopathy.

Diketopiperazines (DKPs): A family of small cyclic neuroprotective compounds being developed by Neuren.

Directors: The directors of the Company.

Efficacy: To produce the desired effect.

Encephalomyelitis: Inflammation of the brain and spinal cord.

Endarterectomy: Surgical removal of the inner lining of an artery that is clogged with atherosclerosis.

Endocrinology: The branch of medicine dealing with the endocrine glands and their hormone secretions.

FDA: Food and Drug Administration, the regulatory body in the USA that approves the marketing of new drugs.

Formulation: The drug substance comprising the active drug product and inert inactive ingredients.

FX Rate: Foreign exchange rate.

**Glial cells:** The cells in the brain which do not generate electrical signals. There are three main types of glial cell; the oligodendrocyte, microglia and astrocyte. Oligodendrocytes are the source of myelin, the substance surrounding axons that makes electrical conduction efficient. Astrocytes provide the support to the neurons. Microglia are the brains resident immune cells.

Glutamic Acid Decarboxylase (GAD): An enzyme involved in the synthesis of gamma amino butyric acid (GABA).

Glypromate: Neuren's lead drug candidate derived from the three amino acids Glycine-Proline-Glutamate.

**Good Clinical Practice (GCP):** A standard for the design, conduct, performance, monitoring, auditing, recording, analyses, and reporting of clinical trials that provides assurance that the data and reported results are credible and accurate, and that the rights, integrity, and confidentiality of trial subjects are protected.



**Good Laboratory Practice (GLP):** A set of principles that provides a framework within which laboratory studies are planned, performed, monitored, recorded, reported and archived. GLP helps assure regulatory authorities that the data submitted are a true reflection of the results obtained during the study and can therefore be relied upon when making risk/safety assessments.

**GPE:** Original abbreviation used for Glypromate<sup>®</sup> derived from the standard single letter abbreviation for the amino acids Glycine (G), Proline (P) and Glutamate (E).

Grey Matter: Regions of the brain tissue with many nerve cell bodies and few myelinated axons.

Growth Factors: A protein that is involved in promoting cell differentiation and growth.

**Growth Hormone:** A hormone produced by the anterior pituitary gland that promotes growth and regulates metabolism in the body.

Huntington's Disease: An inherited neurodegenerative condition characterised by abnormal body movements, dementia and psychiatric problems.

Hyperphagia: Increased food intake due to excessive unsuppressible appetite

Hypoxic-Ischemic Injury: An injury caused by lack of oxygen and/or blood supply to an organ.

Immunomodulation: Regulation of the immune response.

In Vitro: Within a test tube or outside a living organism or cell.

In Vivo: Within a living organism or cell.

**IND:** Investigational New Drug. Before beginning tests (clinical trials) of a new drug on humans, a drug sponsor must submit an IND application to the FDA. The IND contains the plan for the study and must give a complete picture of the drug, including its structural formula, animal test results, and manufacturing information.

**Insulin Resistance Syndrome:** Failure of insulin to function normally, a condition that often leads to non-insulindependent diabetes in which normal levels of insulin in the blood do not produce the normal biological response because of defects in the ability of the tissues to respond.

**Insulin-like Growth Factor-1 (IGF1):** A 71 amino acid peptide growth factor that is produced in many tissues, especially the liver. It mediates some of the actions of growth hormone.

**Intellectual Property:** Promoting the progress of science and useful arts by securing for limited times to authors and inventors, the exclusive rights to their respective writings and discoveries.

**Interferons:** Natural proteins produced by the cells of the immune systems of most animals in response to a challenge by foreign agents such as viruses, bacteria, parasites and tumour cells. Interferons belong to the large class of glycoproteins known as cytokines.

Investment Statement: The Investment Statement issued by the Company pursuant to the Securities Act 1978 (NZ).

Leukodystrophies: A disorder of the white matter of the brain.

Leukoencephalopathy: Any group of diseases affecting the white matter of the brain.

Lipid Disorders: Condition resulting in abnormal levels of the body's fats, including cholesterol and triglycerides.

Listing Rules: The Listing Rules for the time being of the ASX.

Macrocyclics (MCs): A family of highly stable larger cyclic neuroprotective compounds being developed by Neuren.

**Metabolic Syndrome:** A combination of health conditions that place a person at high risk for heart disease. These conditions are type-2 diabetes, hypertension (high blood pressure), hyperlipidemia (high levels of fat in the blood), and obesity. All of these conditions are associated with high blood insulin levels.

**Metabolism:** The way cells chemically change food so that it can be used to keep the body alive. It is a two-part process. One part is called catabolism - when the body uses food for energy. The other is called anabolism - when the body uses food to build or mend cells. Insulin is necessary for the metabolism of food.

Microemboli: A small abnormal particle such as an air bubble or part of a clot circulating in the blood.



Microglia: The resident immune cells of the brain which are only activated after disease, injury or infection.

Mode of Action: The cellular mechanism of how a drug produces its effect in the body.

**Motor Neuron Disease:** A degenerative disease that affects predominantly motor neurons of the spinal cord, cranial nerve and motor cortex.

**Multiple Sclerosis:** A chronic progressive nervous disorder involving loss of myelin sheath around certain nerve fibres, which can present with a variety of neurological symptoms. The disease occurs in attacks or slowly progresses over time. It has no cure yet and the exact cause remains unknown. Due to its effects of the nervous system, it can lead to long-term impaired mobility and disability in severe cases.

**Muscular Dystrophy:** Any of several hereditary diseases of the muscular system characterised by weakness and wasting of skeletal muscles.

**Necrosis:** The name given to unprogrammed death of cells and living tissue (compare with apoptosis – programmed cell death).

**Neural Regeneration Peptides (NRPs):** A family of over 20 peptides discovered by Neuren scientists with unique cell survival, differentiation and migrational properties.

**Neurodegenerative Diseases:** A varied assortment of central nervous disorders characterised by gradual and progressive loss of neural tissue.

**Neurons:** The cells of the nervous system that generate electrical activity. A typical neuron consists of a cell body, containing the nucleus and the surrounding cytoplasm (perikaryon); several short radiating processes (dendrites); and one long process (the axon), which terminates in twiglike branches (telodendrons) and may have branches (collaterals) projecting along its course.

NeuronZ: NeuronZ Limited, a New Zealand incorporated company

Neuroprotection: Treatments being developed to protect against neurotoxicity and the death of brain cells.

New Shares: Shares offered in this Prospectus.

**NNZ-2566:** Neuren's second lead drug candidate. An analogue of Glypromate<sup>®</sup> developed using the backbone structure of Glypromate.

Nitric Oxide Synthase (NOS): An enzyme involved in the synthesis of nitric oxide. In the brain, nitric oxide acts as a neuromodulator to control behavioural activity, influence memory formation, and intensify responses to painful stimuli.

Offer: The offer of New Shares by the Company.

Offer Price: The price of Shares under this Offer (A\$0.40 per share).

Official List: The official list of securities that ASX has admitted and not removed.

**Oligodendrocytes:** A form of glial cell which secretes the myelin that coats axons to make conduction more efficient. They are found in the white matter of the brain and spinal cord.

Opening Date: The date of the Offer opening (see page 8).

Optic Neuritis: The inflammation of the optic nerve that may cause a complete or partial loss of vision.

Option: An option, which, if exercised, will convert into 1 Share.

Optionholder: A holder of Options.

**Parkinson's Disease:** A slowly progressive neurologic disease characterised by a fixed inexpressive face, a tremor at rest, slowing of voluntary movements, a gait with short accelerating steps, peculiar posture and muscle weakness, caused by degeneration of an area of the brain called the substantia nigra and by low production of the neurotransmitter dopamine.

**Peptidomimetics:** Compounds containing non-peptidic structural elements that are capable of mimicking the biological action(s) of a natural parent peptide.

**Peripheral Neuropathy:** A functional disturbance or pathological change in the peripheral nervous system; the aetiology may be known or unknown. Known aetiologies include complications of other diseases, such as diabetes.



**Peripheral Vascular Disease:** Arteriosclerosis of the blood vessels of the extremities characterised by narrowing and hardening of the arteries that supply the legs and feet. This causes a decrease in blood flow that can injure nerves and other tissues.

**Pfizer:** The group of entities that the Company has or had relationships with that are or were related to Pfizer Inc, including Pharmacia & Upjohn Company, Pharmacia & Upjohn AB, and Pharmacia Limited Company.

**Pharmacodynamics:** The study of the biochemical and physiological effects of drugs and the mechanisms of their actions, including the correlation of actions and effects of drugs with their chemical structure.

**Pharmacokinetics:** The activity or fate of drugs in the body over a period of time, including the processes of absorption, distribution, localisation in tissues, biotransformation and excretion.

Phase I Clinical Trial: A clinical trial in normal healthy volunteers to assess drug safety, tolerability and pharmacokinetics.

**Phase II Clinical Trial:** A clinical trial in the patient population to assess drug safety, tolerability, pharmacokinetics and preliminary efficacy data.

**Phase III Clinical Trial:** Large clinical trials across multiple centres to access the efficacy of a drug in treating a specific disease.

**Pontine Myelinolysis:** A neurologic disease caused by severe damage of the myelin sheath of nerve cells in the brainstem, more precisely in the pons.

Post-asphyxial Seizures: A seizure caused by lack of oxygen to the brain, resulting in hypoxia.

**Pre-clinical Development:** Drug development studies in animals and in vitro to assess dose, efficacy, pharmacokinetics and safety before clinical trials.

**Pre-clinical Toxicology:** The testing of new drug candidates for toxic effects in animals undertaken prior to human clinical trials.

**Programmed Cell Death:** The body's normal method of disposing of damaged, unwanted, or unneeded cells. Also called apoptosis.

Prophylactic: A treatment to ward off or prevent a particular disease.

SAB: Scientific Advisory Board of the Company.

Secondary Necrosis: A second phase of necrosis of brain cells delayed for some time from the injury.

Share: A fully paid ordinary share in the Company.

Shareholder: means a holder of Shares.

Somatosensory: The system of brain cells that sense pain and other sensations from the skin or deep tissues.

**Stroke:** An acute clinical event that leads to impairment of blood flow to the brain; it can either be due to a blockage of a blood vessel or to rupture of a blood vessel within the brain.

Syndrome X: An alternative name for Metabolic Syndrome.

Therapeutic Intervention: A treatment aimed at curing or restoring a person's health.

**Transverse Myelitis:** A neurologic disorder caused by a loss of the myelin encasing the spinal cord, also known as demyelination. It may occur alone or together with multiple sclerosis.

Traumatic Brain Injury (TBI): Brain damage from trauma or injury. It may be penetrating or non-penetrating depending on whether the skull is fractured.

**Tyrosine Hydroxylase (TH):** An enzyme that causes the hydroxylation of tyrosine to dopa. Dopa is the precursor of the neurotransmitter dopamine. Deficiency of dopamine in the brain results in Parkinson's disease.

UniServices: Auckland UniServices Limited.

Valvuloplasty: Repair of a cardiac or venous valve.

White Matter: Brain tissue composed of nerve cells processes (axons and dendrites) that connect various parts of the brain to each other and carry nerve impulses to or from the bodies of nerve cells (neurons). It is rich in myelin.



Neuren Pharmaceuticals is a leading biopharmaceutical company with a focus on neuroprotection and metabolism.

The Company has five proprietary families of compounds, with an extensive IP portfolio.

Neuren has an extensive network of collaborators and research partners including Pfizer, Duke University, the Walter Reed Army Institute, University of Texas Medical School and Metabolic Pharmaceuticals.

