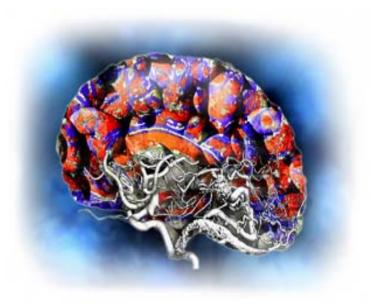


# **Neuren Pharmaceuticals Pipeline and Strategy Update April 2006**







This presentation includes forward-looking statements that are subject to risks and uncertainties. Such statements involve known and unknown risks and important factors that may cause the actual results, performance or achievements of Neuren to be materially different from the statements in this presentation.

Actual results could differ materially depending on factors such as the availability of resources, the results of clinical studies, the timing and effects of regulatory actions, the strength of competition and the effectiveness of patent protection.



## **Corporate Overview**

Repairing brain damage from injury and aging



## Neuren – Corporate Overview

- Neuren is a drug development company targeting brain repair & rescue, metabolism and cancer
- Neuren has an extensive development portfolio offering several means of delivering value
  - Two compounds in the clinic
  - Four compounds in pre-clinical development
  - Two discovery programs

Register		
NeuronZ Ltd:	11.0%	
NZ Seed Fund Management Ltd:	10.2%	
Pfizer Inc:	7.2%	
K One W One:	5.6%	
Macquarie:	8.6%	
Top Twenty:	71.4%	

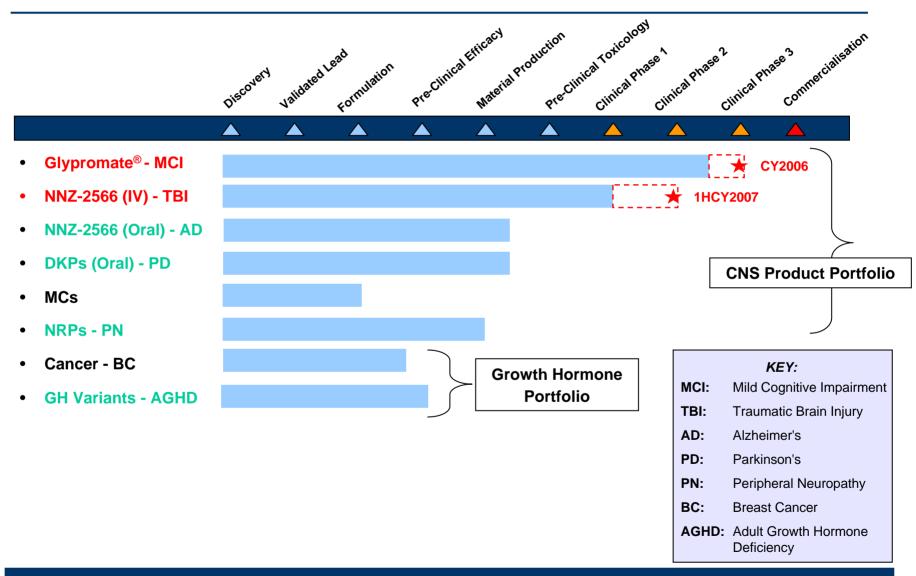
- Neuren's lead products protect against brain damage, with two NCEs in Human Trials:
  - Glypromate®: Mild Cognitive Impairment (MCI) enters Phase 3 in 2H CY2006
  - NNZ-2566: Traumatic Brain Injury (TBI) enters Phase 2 in 1H CY2007
- Neuren is focused on its end market, the United States
  - Neuren has established an office and excellent team in the United States
  - Neuren has negotiated a very attractive collaboration with the US Army with respect to the development of NNZ-2566
- Neuren's team is result-oriented and has delivered every milestone on time and within budget (Currently \$10.6M cash on hand)



## Milestones

NRP collaboration formalised with Metabolic	2005	✓
Collaboration with the US Army Walter Reed Army Institute of Research	2005	✓
US Army study results show reduced functional deficit from TBI with NNZ-2566	2005	✓
FDA accelerates Glypromate into Phase 3	2005	✓
Glypromate® Phase 2 safety study commenced 2005	2005	✓
Two US patents for the Glypromate® family in Parkinson's Disease	2005	✓
NNZ-2566 pre-clinical Phase 3 toxicology studies completed	2005	✓
NNZ-4921 Peripheral Neuropathy results positive	2005	✓
NNZ-2566 confirmed orally available	2005	✓
NNZ-2591 oral program advancing	2005	✓
Cancer NNZ-8000 program underway	2005	✓
Completion of Phase 3 pre-IND FDA preclinical requirements for Glypromate®	2006	✓
Initiation of NNZ-2566 Phase 1 safety study in Q1 06	2006	✓
Completion of Glypromate® Phase 2 safety study	2006	✓
NNZ-2566 results using US Army seizure technology - joint patent	2006	✓
Budget and cash flow forecasts	2005/06	✓

## **Development Pipeline**



Extensive development portfolio offering several means of delivering value



## Neuren's Two-Pronged Business Strategy

- 1) Focus bulk of resources on drugs in clinical trials
- 2) Out-license/partner lead molecules in CY2007

## Update on Strategy – Part 1

#### **Two Drug Candidates in Clinical Trials**

- Glypromate® for mild cognitive impairment (MCI) during Coronary Artery Bypass
   Graft (CABG) surgery is entering Phase 3 Clinical Trials in 2H CY2006
- NNZ-2566 (i.v.) for traumatic brain injury (TBI) is currently in Phase 1 Clinical Trials that are being conducted with the US Army
- Trials are very cost effective
  - Including the Phase 2 (i.v.) trial for NNZ-2566
  - Neuren does NOT have to seek any new Partners to fund these trials
- Drug positioning of these two molecules is attractive:
  - FDA accelerated Glypromate®, potentially first in class
  - All previous TBI trials have been fast-tracked, and potentially orphan, in addition Neuren can utilise new US Army technology
- Hence, Neuren's primary focus (with US Army) is to continue with the trials of Glypromate® and NNZ-2566 potentially all the way to registration
  - Further, out-licensing of NNZ-2566 (i.v.) is NOT precluded by collaboration with US Army
  - Hence, Neuren has the option to progress drugs through trials itself, or at any stage out-license both Glypromate <sup>®</sup> and NNZ-2566



## Update on Strategy – Part 2

#### **Extensive Pipeline with Attractive Drug Candidates**

Neuren is not a one product company...

At least 3 other lead candidates :

LEAD CANDIDATES

NNZ-2566 (ORAL): From 2566 iv Family

NNZ-2591 (ORAL): From DKP Family

NNZ-4921 (i.v.): From NRP Family

- NNZ-2566 (ORAL) and NNZ-2591 could both be in clinical trials in CY 2007
- These candidates are targeted for Chronic CNS application (e.g., Parkinson Disease (PD), Alzheimer's Disease (AD), Peripheral Neuropathy (PN))
  - Chronic CNS applications, while normally larger markets, require a longer and more costly development path compared to Glypromate ® for MCI and NNZ-2566 (i.v.) for TBI
- Neuren will seek to out-license/partner these lead molecules in CY2007
  - Generate income and reduce costs of development
  - Will ensure that the deal structure for at least ONE of the programs (incl. cancer) allows Neuren to retain significant upside and development control
- Recent US feedback very supportive of this strategy



## **Clinical Trials Update**

Both trials have delivered excellent results to date

## Phase 3 Glypromate® Trial

#### **Excellent Results To Date:**

- Phase 2 trial finishes successfully with no safety issues
- Final GLP toxicology studies completed—no adverse effects at maximum feasible dose
- GMP drug manufacturing and quality control program validated

#### **Phase 3 Preparation is On Track:**

- Phase 3 IND preparation underway and on schedule
- Full clinical trial management team in place
- FDA agrees to early review and feedback by medical reviewer
- Agreement signed with US CRO to manage US sites
- Recent paper in New England Journal of Medicine points to need to protect all brain cells, not just neurons—a key feature of Glypromate<sup>®</sup> and NNZ-2566



## NNZ-2566 in Traumatic Brain Injury

#### **Neuren will Now Use Non-Convulsive Seizures as Key Endpoint:**

- US Army and Neuren file joint patent covering effect of NNZ-2566 on non-convulsive seizures
- Non-convulsive seizures are one of the changes in brain wave measured by EEG seen in stroke and TBI and predict poor outcomes
- NNZ-2566 significantly reduced the incidence and duration of silent brain seizures in the Army's model
- Neuren will incorporate brain wave measurement as a key endpoint in upcoming clinical trials
- New measurement technique is more sensitive and quicker to detect an effect, reducing trial time and cost
- Technique also applicable to stroke

#### **Excellent Progress to Date:**

- Phase 1a study underway
- Army and Neuren are collaborating in design of Phase 2 studies
- Army is highly encouraged by results; reiterates support for program

Phase 1a Trial Details: 35 subjects (double blind, 0.1,1,10,20,30 mg/kg bolus, 7 per cohort( 2 control,5 drug))

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## NNZ-2566 Flexibility

Toxicity package allows other acute iv markets:

#### Hemorrhagic Stroke

- > Market Potential: US\$800m
- > Similar Pathology to TBI
- ➤ NNZ-2566 has delivered strong in vivo results

#### Stroke Recovery

- ➤ Market Potential: US\$2 billion
- > In hospital post-stroke
- ➤In vivo results University of Texas

- And... NNZ-2566 (ORAL)
  - Chronic Markets Stage 2 of Neuren's Strategy
  - Orally available formulation (25%+)
    - Cognition
    - Memory and Learning



## **Out-licensing Opportunities**

Four attractive near-term out-licensing opportunities



## Four Near Term Out-licensing Opportunities

- NEU does not have the resources to independently develop its <u>entire</u> pipeline
- NEU has focused on developing four product lines such that they are attractive near-term out-licensing opportunities
  - Stable compounds
  - Excellent manufacturing characteristics
  - Excellent in vivo results

#### **NNZ-2566 (oral)**

- Confirmed oral bioavailability
- Highly protective in stroke (90%)
- TargetingAlzheimer's Disease /Dementia
- Excellent IP position
- CY2006 Q2/3 invivo complete

#### **DKP: NNZ-2591**

- Well known class: Unique analogue
- Parkinson's disease results confirmed
- Oral
- Parallel NNZ-2566 oral

#### NRP: NNZ-4921

- In vivo successful
- PeripheralNeuropathy Unmet need
- Chemistry
   Manufacturing and
   Control / ADME
   underway
- Joint venture with Metabolic

#### Cancer: NNZ-8000

- Breast cancer Growth hormone mediated: 90% relevant
- Ab and small molecule
- Q2 milestone pAb
- Q3 milestone mAb



## NNZ-2566 (Oral) for Chronic Indications

- Oral bioavailability and activity confirmed
- Potent effects in stroke model
- Excellent candidate for stroke and TBI recovery therapy
- Strong potential for chronic indications including Alzheimer's Disease, mild cognitive impairment, vascular dementia, transient ischemic attack
- New patent extensions filed
- Significant interest expressed from potential Pharma partners
- TBI recovery identified as key target by US military
- Good opportunity for combination of i.v. for acute therapy followed by oral for longer-term recovery



## Diketopiperazines—NNZ-2591

- Novel, patented molecule closely related to drug class with strong history in diseases with memory and cognitive impacts
- Ease and highly competitive cost of manufacturing confirmed
- Oral availability and activity established in multiple disease models
- Potent neuroprotection observed in animal models of stroke and Parkinson's Disease
- Excellent potential for targeting stroke, Parkinson's Disease and Parkinson's Disease dementia
- No evidence of toxicity in animals
- Significant interest expressed by potential pharma partners





- Cancer program based on role of growth hormone in cancer development
- Patent filed for new pathway and target for breast cancer treatment
- Multiple therapeutic approaches show significant effect on breast cancer cells taken from human patients
- Approach could prove critical to treating breast cancers resistant to current therapies, including new drugs Herceptin, Tamoxifen and Reloxafine
- Two antibody drugs in production for testing in animals and human tissues
- Interest already expressed by potential pharma partners



## Conclusion Poised for major milestones

#### Conclusion

- Two lead drug candidates are at advanced stage of development and poised for significant clinical milestones
  - Glypromate® enters Phase 3 in 2H CY2006
  - NNZ-2566 Phase 1 trial is being conducted in collaboration with US Army and will deliver results before end of CY2006
- Neuren is uniquely positioned to conduct late stage clinical trials for both Glypromate® and NNZ-2566
  - Typically such trials are prohibitively expensive
  - Neuren is close consultation with FDA has developed a cost effective Phase 3 Trial for Glypromate® plus time and money savings from acceleration into Phase 3
  - Neuren shares cost of NNZ-2566 development equally with the US Army but only sacrifices 1-2% of the total market (US military use)
- Neuren has excellent near-term commercialisation prospects
  - Option to secure licensing deal for two lead products at a point in time that optimises returns (i.e. Neuren
    is not compelled to license out early due to prohibitive trial costs)
  - Opportunity to out-licence four product lines in the near term (from Q1 CY2007)
- Breadth and quality of Neuren's portfolio is first-rate
  - Top calilbre international partners: Pfizer and US Department of Defence
  - Two products in the clinic, four candidates in pre-clinical development and two discovery programs