

Developing Xanamem™ for Alzheimer's Dementia

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Actinogen AGM

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Actinogen
Medical

Forward Statements



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Actinogen Board



A highly experienced Board and Management team with a wealth of drug development, commercialisation and clinical research expertise.



Martin Rogers
Executive
Chairman

- Biotechnology entrepreneur and executive.
- Non-Executive Director of OncoSil (ASX:OSL), Chair of Rhinomed (ASX:RNO).



Dr. Bill Ketelbey
CEO & MD

- MD with 30 years' experience in pharmaceuticals.
- Senior roles at Pfizer, including development of Aricept™, the current leading AD treatment.



Dr. Jason Loveridge
Non-Executive
Director

- Former head of Nomura Life Sciences Fund in the UK with 28 out of 34 investment wins in investing in Biotech.



Dr. Anton Uvarov
Non-Executive
Director

- Healthcare and biotech equities analyst, formerly Citibank NY.
- Executive Director of Sun Biomedical.

Senior Management



Dr. Bill Ketelbey
CEO & MD

- MD with 30 years' experience in pharmaceuticals.
- Senior roles at Pfizer, including development of Aricept™, the current leading AD treatment.



Vince Ruffles
VP Clinical
Research

- Extensive drug development experience over 20 years.
- Responsible clinical development and regulatory strategy.



Dr. Laura Issa
Director
Strategy and BD

- Experiences BD and licensing professional with 10 years commercial experience, plus 10 years medical research experience at the Garvan.
- Senior roles in pharmaceutical industry, including Merck Sharp Dohme.

Alzheimer's: A significant unmet need



Alzheimer's disease is emerging as one of the most significant health challenges of our time.

- A person develops AD almost every minute in the US¹.
- AD is the second leading cause of death in Australia behind ischaemic heart disease.
- 1:4 will suffer from it by age 85; 1:2 by age 95.
- Number of patients doubles every 20 years.
- Estimated to increase to US\$1 trillion by 2050, outstripping the cost of treating all other diseases.
- **Current treatments provide limited benefit. New treatments are desperately needed.**

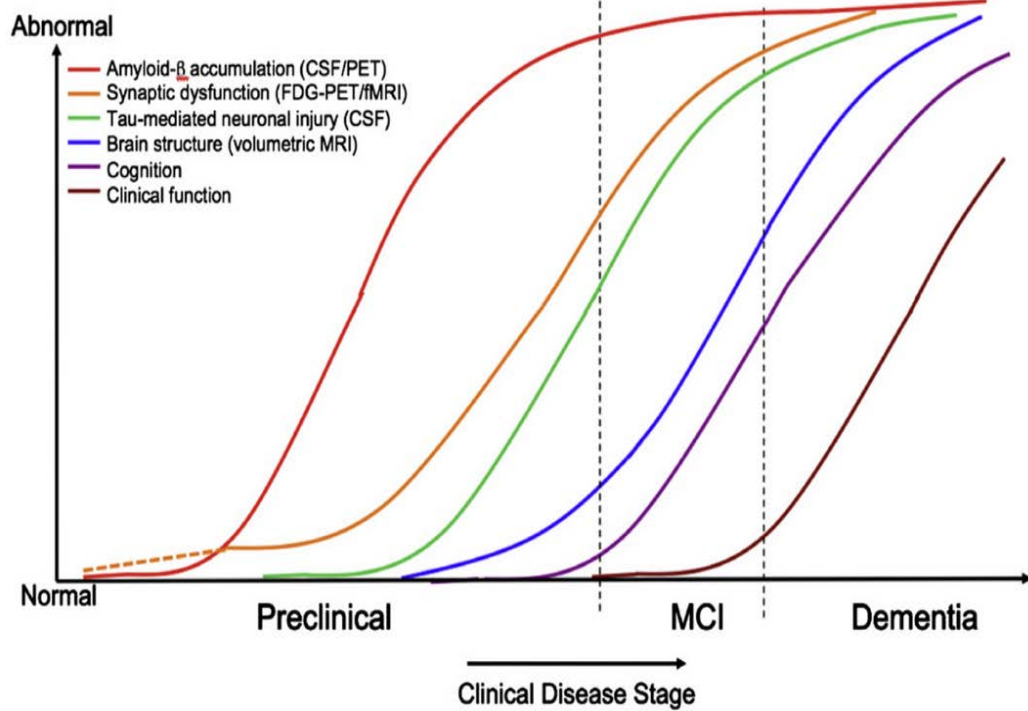
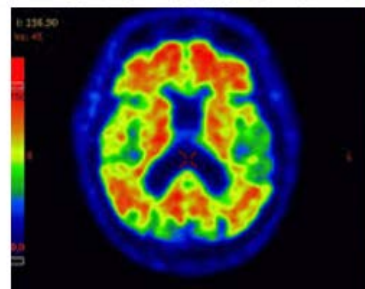
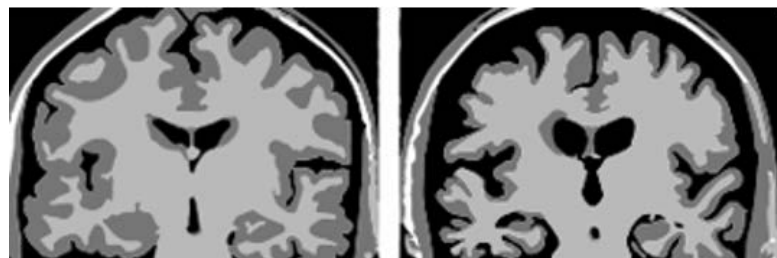


Alzheimer's is the only cause of death among the top 10 in America that
**CANNOT BE PREVENTED,
CURED OR EVEN SLOWED.**



1 in 3 Seniors
DIES WITH ALZHEIMER'S
or another dementia.

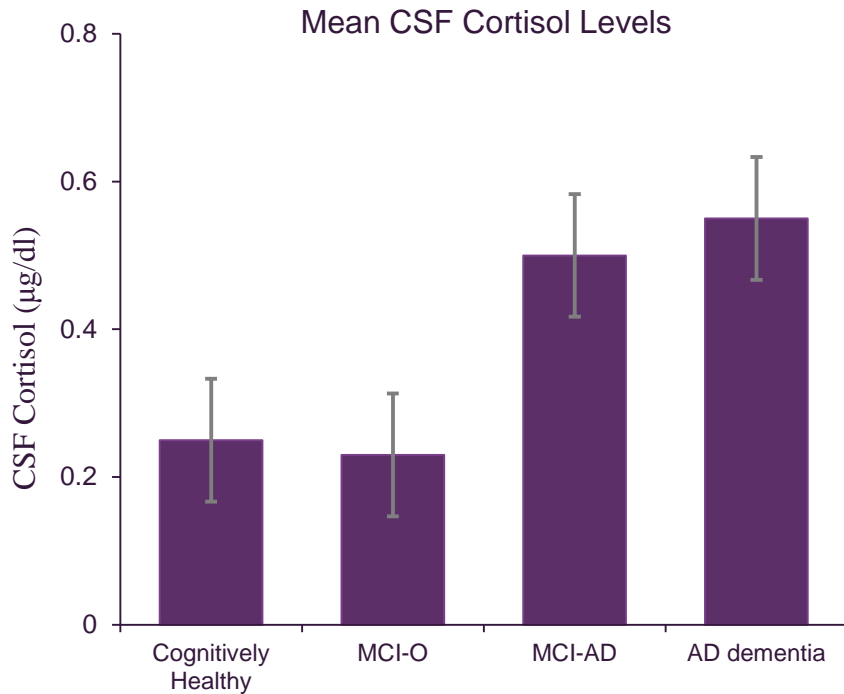
Disease progression and diagnosis



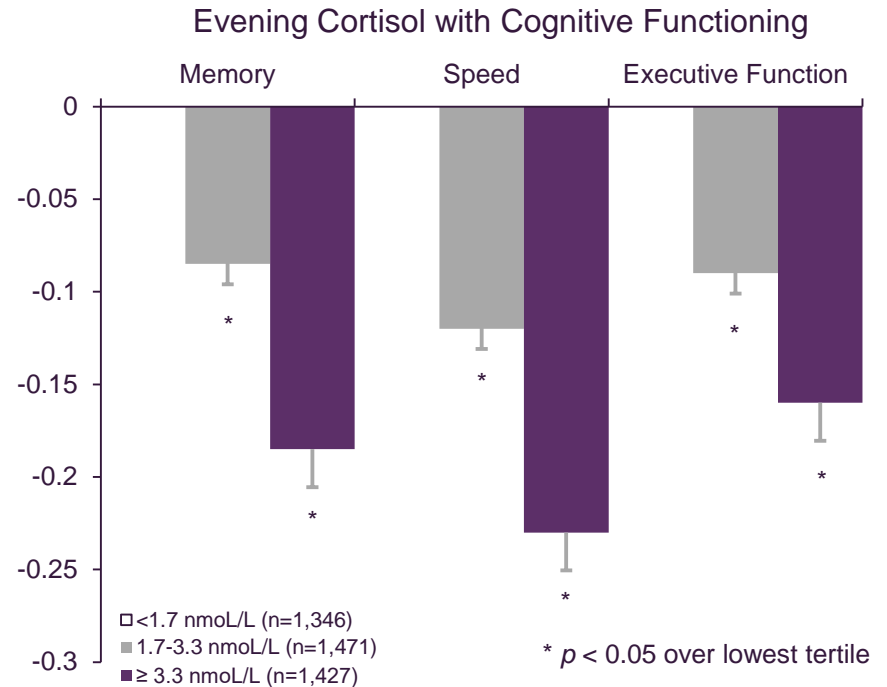
Cortisol and Alzheimer's disease



Elevated cortisol associated with cognitive decline.



(Popp et al., 2015)



(Geerlings et al., 2015)

11 β -HSD1, Cortisol and Cognition



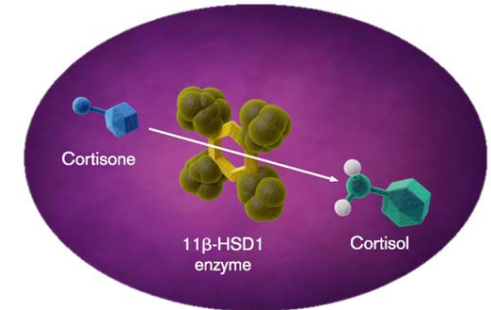
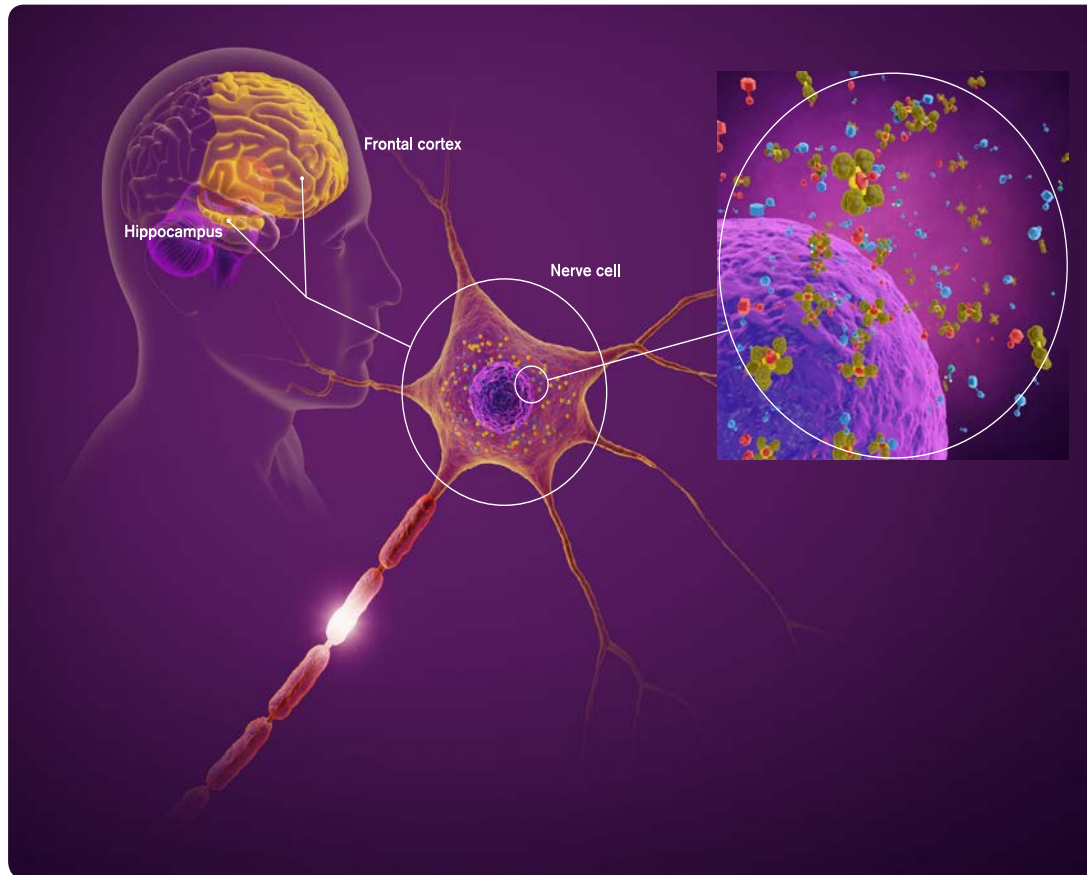
Extensive human and animal proof of concept:

- 11 β -HSD1 generates cortisol in brain regions important for cognition (Seckl *et al.*, 2004).
- 11 β -HSD1 inhibition (with non-selective inhibitor, carbenoxolone) improves cognition in humans (Sandeep *et al.*, 2004).
- Specific human haplotypes of 11 β -HSD1 are associated with sporadic AD risk (de Querain *et al.*, 2004).
- 11 β -HSD1 knockout mice are protected against age-related cognitive impairment (Yau *et al.*, 2001).
- Small molecule inhibition of 11 β -HSD1 improves cognition in rodent ageing and AD models (Sooy *et al.*, 2010; Sooy *et al.*, 2015).
- Small molecule inhibition of 11 β -HSD1 reduced A β plaque burden (Sooy *et al.*, 2015) and plasma A β (Abbott, ICAD 2010) in rodent AD models.

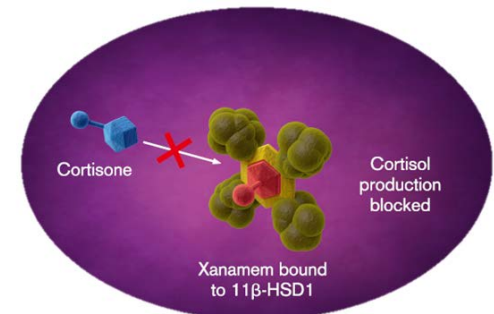
Inhibiting 11 β -HSD1



Xanamem™'s mechanism of action –
a novel pathway suppressing cortisol production



HSD1 enzyme activates cortisone producing cortisol.



Xanamem™ binds to HSD1, blocking cortisol production.

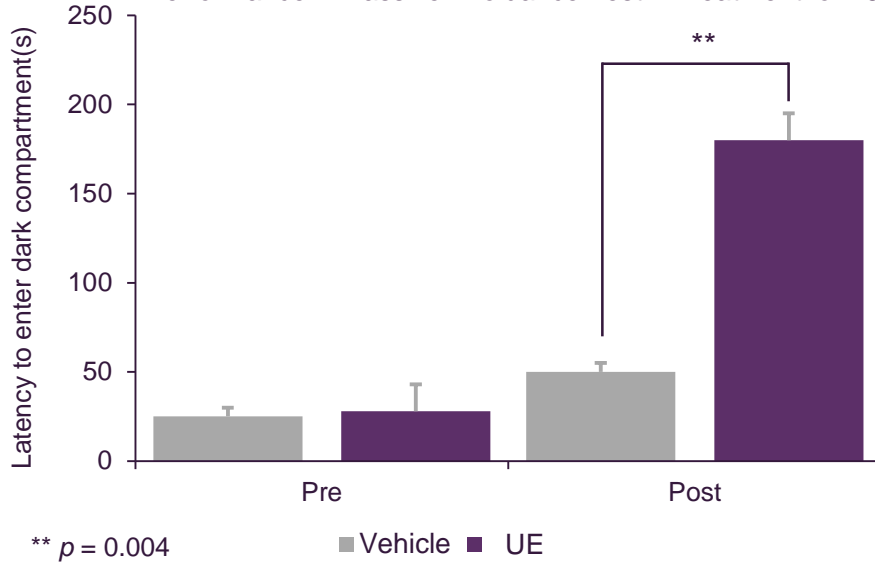
Cognitive efficacy of UE2316*



*precursor to Xanamen™

Cognitive Enhancement in AD with UE

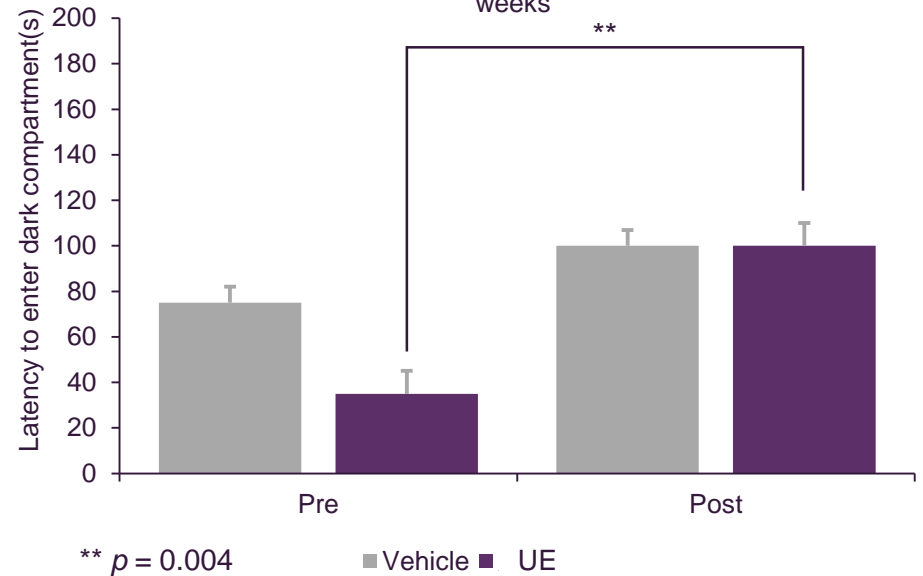
Performance in Passive Avoidance Test – Treatment for 28 days



Tg 2576 rodents

Cognitive Enhancement in AD with UE

Performance in Passive Avoidance Test – Treatment for 41 weeks

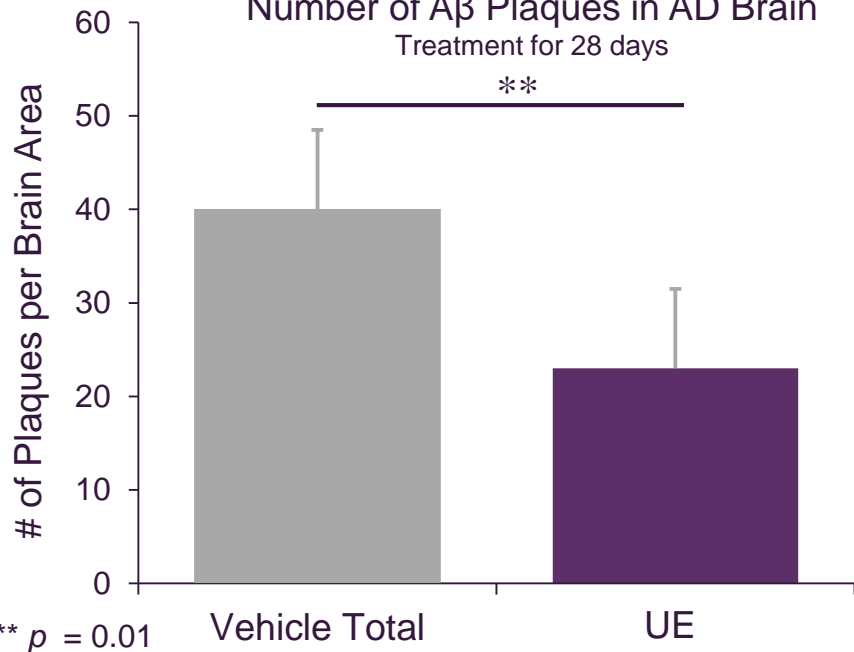


Disease modification of UE2316*



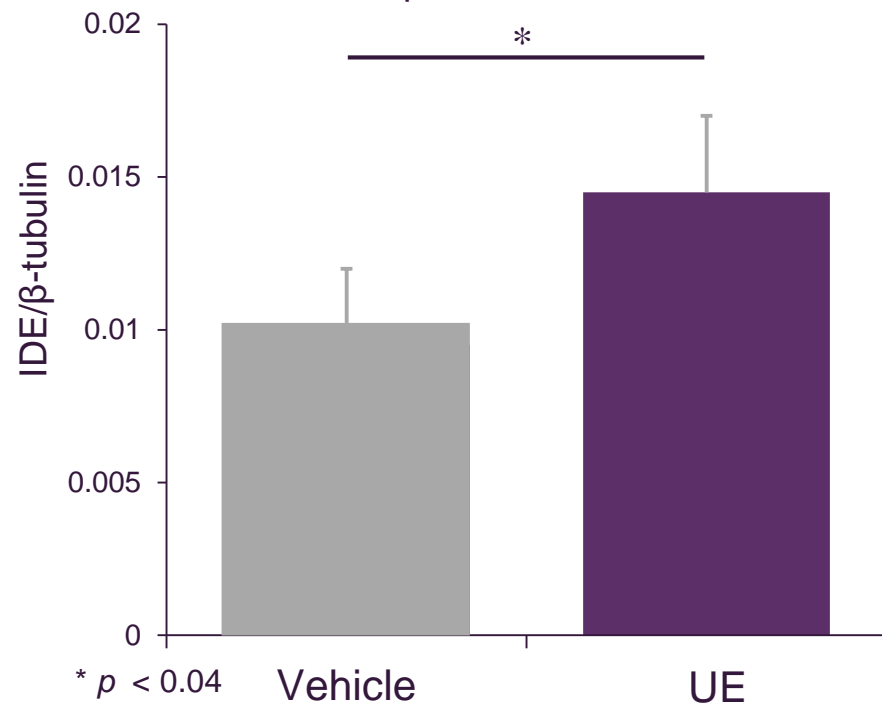
*precursor to Xanamen™

Number of A β Plaques in AD Brain Treatment for 28 days



Tg 2576 rodents

IDE Expression in AD Brain



Xanamem™ development milestones



2015

- ✓ Completed second Phase I trial (MAD, fed/fasted, CNS PK).
- ✓ Completed second species pre-clinical toxicology study.
- ✓ Established the Xanamem Clinical Advisory Board.
- ✓ Designed Alzheimer's Phase II trial - "Xanadu".
- ✓ Selected service providers - CRO (research), Regulatory and Manufacturing.
- ✓ Raised capital: \$11m - adequate to complete Phase II trial.

2016

- FDA approval of IND to run Phase II in US.
- Regulatory approval in UK and Australia for trial.
- Ethics approvals received.
- First patient recruited into Phase II trial - expected Q2.
- Patients recruited in all 3 geographies - USA, UK, Australia.

Xanamem™ Clinical Advisory Board



Powerhouse Advisory Board of world expert to drive Xanamem™'s clinical development in early Alzheimer's disease.



Prof. Craig Ritchie

- Professor of Psychiatry of Aging, University of Edinburgh, UK.
- Senior Investigator in over 30 Alzheimer's clinical trials.
- Published extensively on dementia.



Prof. Colin Masters

- Professor, University of Melbourne, Australia.
- Executive Director of Mental Health Research Institute.
- Senior Deputy Director of the Florey Institute of Neuroscience and Mental Health.



Prof. Jeffrey Cummings

- Professor of Medicine (Neurology), Cleveland Clinic, Ohio and Nevada, USA.
- Chair of the Neurological Institute of Cleveland Clinic.
- edited 39 books and published over 650 papers.

“Xanadu” Development Meeting



Left-right: Prof Craig Ritchie, Prof Brian Walker, Prof Colin Masters, Martin Rogers, Dr Bill Ketelbey, Vincent Ruffles, Dr Scott Webster, Prof Jonathan Seckl.
Absent: Prof Jeff Cummings.

The Alzheimer's Phase II trial design meeting, held in Edinburgh (June 2015) – including the Xanamem™ Clinical Advisory Board, the Xanamem™ discovery team (Profs. Brian Walker, and Jonathan Seckl, and Dr. Scott Webster) and Actinogen senior management.

Phase II trial design – “XANADU”



“XANADU” - A Phase II double-blind, randomised, placebo controlled study to assess the safety, tolerability and efficacy of Xanomem in participants with mild AD.

Design Feature	Description
Patient Number	200 - US, UK, AUS
Treatment Course	12 weeks
Patient Eligibility	Mild Alzheimer’s: MMSE 20 – 26 <ul style="list-style-type: none">• On standard therapy: acetylcholinesterases or memantine
Xanomem™ Dosage	To be determined – mid November
Primary End Point	ADCOMS
Secondary End Points	Multiple, including ADAS-Cog, MMSE & CSF A β and Tau
Fist Patient Enrolment	Expected Q2, 2016

Investment Highlights



- Alzheimer's - a significant unmet need in a huge and growing global market.
- Xanamem's™ novel mechanism of action targeting the stress hormone cortisol – a key differentiator.
- Cortisol inhibition hypothesis supported by good pre-clinical and clinical evidence.
- Evidence Xanamem™ is **both symptomatic and disease modifying**.
- Phase II trial in mild Alzheimer's patients expected to initiate in Q2 2016, and will run in the USA under an IND, Aus. and the UK .
- Phase II study **fully funded through to completion**.
- Patent protected to 2031 – composition of matter.
- Expect to use Xanamem™ in combination with other AD therapies – little or no market competition.
- A number of very significant additional indications being evaluated for development in parallel.
- Intent to grow and develop the business through partnering and licencing – in and out.



THOMSON REUTERS

Xanamem™ named in top five drugs in Phase 1 development in the global pharmaceutical or biotech industries



Xanamem™ Pipeline



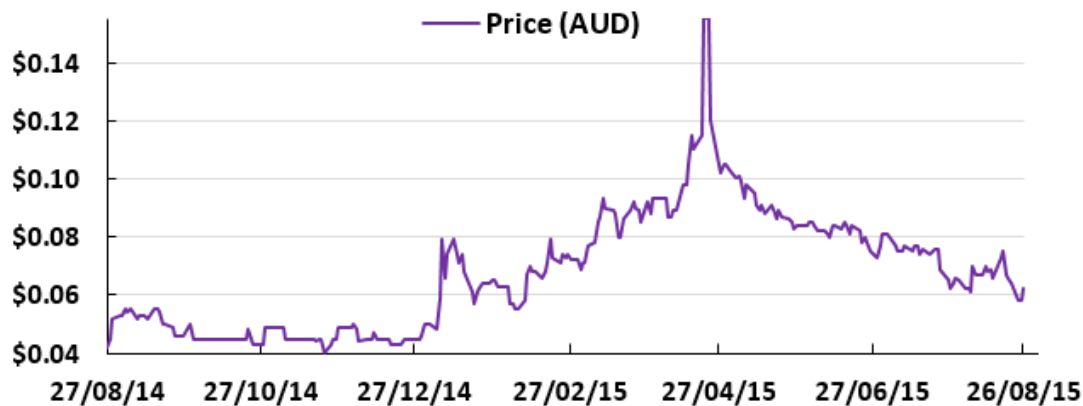
Xanamem™'s novel mechanism of action – blocking excess cortisol production – offers a number of additional potential indications in the central nervous and endocrine/metabolic systems.

Development opportunities:

- Cognitive dysfunction in Parkinson's disease.
- Cognitive dysfunction in schizophrenia, depression.
- PTSD (post traumatic stress disorder).
- Diabetes – cognitive dysfunction.
- Diabetes – diabetic foot ulceration.
- Cardiovascular disease – post myocardial infarction.



Financials



Key Corporate Data:

Market Cap [*]	~\$33m
Share Price [*]	\$0.055
Cash ^{**}	\$8.88m
Shares on issue [^]	606.16m

^{*}Market cap and share price data as of 11th November, 2015.

^{**}Includes the proceeds from the Placement and SPP. Doesn't include R&D tax rebates. As at 30th September, 2015.

[^]post Placement and SPP.

Top Ten Shareholders	Percentage
Edinburgh Technology Fund Limited	7.94%
Tisia Nominees Pty Ltd	5.55%
JK Nominees Pty Ltd	5.44%
Mr Martin Rogers	4.12%
Warmbi SARL	3.61%
Webinvest Pty Ltd	3.54%
Denlin Nominees Pty Ltd	3.15%
Mr Jason Peterson & Mrs Lisa Peterson	3.05%
Oaktone Nominees Pty Ltd	2.43%
Dr John William Ketelbey	2.04%



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Thank You
