

ASX ANNOUNCEMENT**Actinogen to Present to Investors in Singapore and Sydney**

- Dr Bill Ketelbey, CEO, presenting business update to investors, including institutional investors, family offices and hedge funds in Singapore and Sydney
- Presentation attached with latest progress and milestones achieved
- XanADu update: 145 patients enrolled out of the 174 target, representing 83% of the total
- XanADu: only 29 more patients to enrol. On track to complete enrolment before year-end and to report out results in Q2 2019
- A number of new studies supporting the development of Xanamem already underway or soon to initiate, including target occupancy, higher dose safety and multiple safety toxicology studies.

Sydney, 11 September 2018. Actinogen Medical (ASX: ACW) CEO, Dr Bill Ketelbey, will present a business update at the *Singapore Healthcare Investor Day* on the 12th of September 2018 and the *Financial News Network Investor Conference* on the 18th of September 2018 in Sydney. A copy of the presentation to be delivered is attached.

At the *Healthcare Investor Day*, Actinogen will present to leading Singapore-based hedge funds, family offices and institutional investors and hold a series of one to one investor meetings.

Along with the Australian market, Singapore is an important region for life sciences investment with a large number of sophisticated investors focused on the sector. It is a gateway to Asia and has emerged as the Asian capital for biotech and med-tech development following government backed initiatives aimed at promoting and attracting leading scientists and researchers to the country.

Singapore also has a high prevalence of people with dementia aged 60 years and over. It has been estimated that one in every ten people aged over 60 years in Singapore has some form of dementia¹ and by 2020 it is anticipated that over 50,000 people will be diagnosed with dementia².

At both investor conferences, Dr Ketelbey will present a business update on Actinogen with the latest progress and milestones achieved. Most significantly, he will provide an update on the excellent progress being made with XanADu, the Company's clinical trial of its lead compound, Xanamem, in Alzheimer's disease. Currently there are 145 patients enrolled out of the target of 174, representing 83% of the total. At the current rate of enrolment, the final patient is expected to be enrolled before the end of the year, resulting in top-line results from the study in Q2 next year, less than 12 months from now.

Dr Ketelbey will also update the market on the Company's expanded development plans for Xanamem. Following the successful capital raise in May 2018, that included strong institutional support, the Company announced a number of new studies, including a target occupancy study that is already underway. Further additional studies will begin in Q4 of this calendar year and will include a higher dose safety study and multiple safety toxicology studies to support the development of Xanamem.

ENDS

¹ Singapore Elderly (WiSE) study

² Alzheimer's Disease Association (Singapore)


Actinogen Medical

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About Actinogen Medical

Actinogen Medical (ASX: ACW) is an ASX-listed biotech company focused on innovative approaches to treating cognitive decline that occurs in chronic neurodegenerative and metabolic diseases. Actinogen Medical is developing Xanamem a promising new therapy for Alzheimer's disease, a condition with a multibillion dollar market potential. In the US alone, the cost of managing Alzheimer's disease is estimated to be US\$250bn, and is set to increase to US\$2tn by 2050, outstripping the treatment costs of all other diseases. Alzheimer's disease is now the leading cause of death in the UK and second only to ischaemic heart disease in Australia.

About Xanamem™

Xanamem's novel mechanism of action sets it apart from other Alzheimer's treatments. It works by blocking the excess production of cortisol - the stress hormone – through the inhibition of the 11β-HSD1 enzyme in the brain. This enzyme is highly concentrated in the hippocampus and frontal cortex, the areas of the brain most affected by Alzheimer's disease. There is a strong association between chronic stress and excess cortisol that leads to changes in the brain affecting memory, and to the development of amyloid plaques and neural death – all hallmarks of Alzheimer's disease.

About XanADu

XanADu is a Phase II double-blind, 12-week, randomised, placebo-controlled study to assess the safety, tolerability and efficacy of Xanamem in subjects with mild dementia due to Alzheimer's disease. XanADu, will enrol 174 patients at 20 research sites across Australia, the UK and the USA. The trial is registered on www.clinicaltrials.gov with the identifier: NCT02727699, where more details on the trial can be found, including the study design, patient eligibility criteria and the locations of the study sites.

Actinogen Medical encourages all current investors to go paperless by registering their details with the designated registry service provider, Link Market Services.



Actinogen
Medical

Alzheimer's Treatment Needs a New Approach – Xanamem™

Bill Ketelbey – September 2018

Singapore

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Actinogen Medical (ASX:ACW)

- Xanamem, Actinogen's lead compound, in development for the treatment of Alzheimer's disease (AD) and cortisol-associated cognitive impairment
- Xanamem, a novel differentiated mechanism of action: prevents the production of excess brain cortisol
- Persistently raised cortisol in the brain is associated with the development and progression of AD
- First-in-class, brain penetrant, orally active, inhibitor of 11 β HSD1 enzyme, reducing conversion of cortisone to cortisol
- Experienced board and management; expert clinical and scientific advisory boards

STOCK METRICS *

ASX CODE	ACW
Market Capitalisation	\$63.1m
Enterprise Value	\$53.1m
52-week High/Low	\$0.039-\$0.066
Top 20 Shareholdings	61%

TOP 10 HOLDERS

Rank	Name	%
1	HSBC Custody Nominees	24.34%
2	National Nominees Ltd	4.49%
3	Edinburgh Technology Fund Limited	4.43%
4	JK Nominees Pty Ltd	3.68%
5	Citicorp Nominees	2.12%
6	CS Fourth Nominees	2.04%
7	Warambi Sari	2.01%
8	BNP Paribas Nominees Pty Ltd	1.93%
9	Mr Martin Rogers	1.84%
10	Sunset Capital Management Pty Ltd	1.84%

In May 2018, Actinogen raised \$16.5m via an institutional placement and SPP that saw leading US biotech investor, *BVF Partners LP* take a 19.9% holding and leading Australia-based institutional investors *Australian Ethical* and *Platinum Asset Management* join the register.



Commercially experienced, globally recognised

Board of Directors



Dr. Geoff Brooke
Chairman



Dr. Bill Ketelbey
CEO & MD



Dr. Jason Loveridge
Non-Executive Director



Dr. George Morstyn
Non-Executive Director

Xanamem Clinical Advisory Board



Prof. Craig Ritchie
Chair



Prof. Colin Masters



Prof. Jeffrey Cummings



A foundation of cutting edge research and translation



Scientific Advisory Board



Prof Jonathan Seckl

Vice Principal
University of Edinburgh



Prof Brian Walker

Pro-Vice-Chancellor
Research Strategy and
Resources
University of Newcastle



Prof Scott Webster

Professor of Medicines Discovery
University of Edinburgh

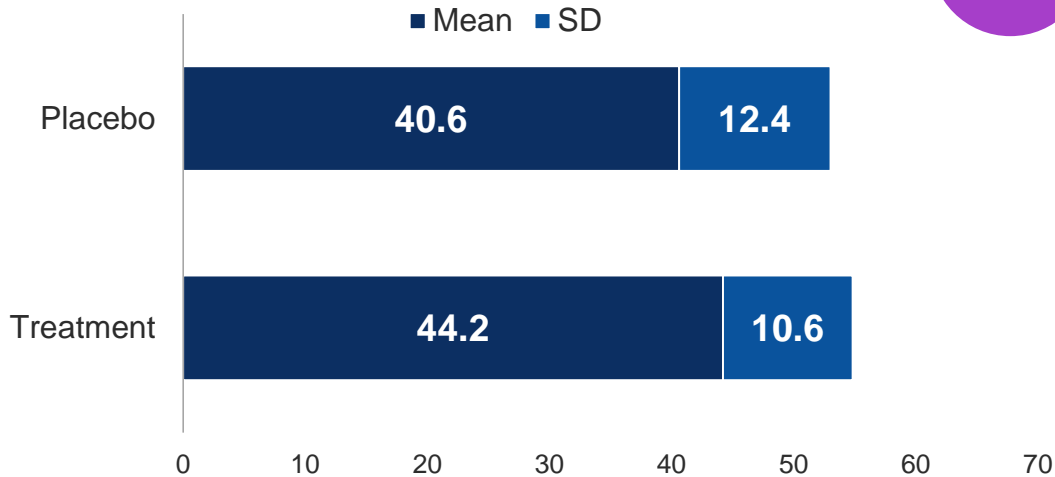
- Combining deep understanding of endocrinology, 11 β HSD1 and drug discovery
- Conducted seminal research linking cortisol with cognitive decline
- Actively engaged in the progress and development of Xanamem

Human pilot studies (2004) - Cortisol inhibition improves cognition

Inhibiting cortisol production in the brain with carbenoxolone improves cognitive function in healthy elderly men & type 2 diabetics

VERBAL FLUENCY – Study 1*

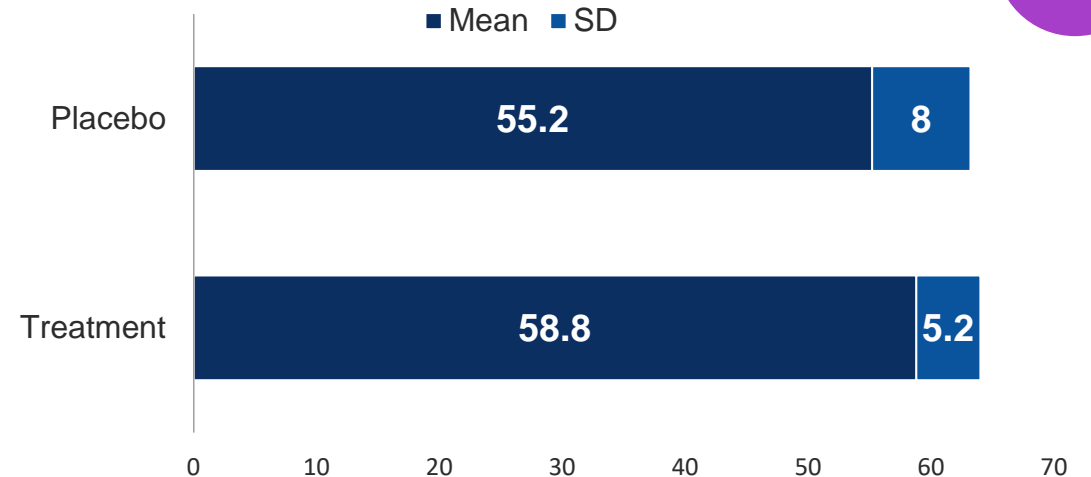
P=0.006



* Study 1 = 10 healthy subjects Age 55-75 (Mean Age = 65.5 ± 5.5) receiving 100mg carbenoxolone 3 times daily compared to placebo for 4 weeks, in a double-blind randomised crossover study.

VERBAL MEMORY – Study 2**

P=0.005



**Study 2 = 12 type 2 diabetics (m=9; f=3) Age 52-70 (Mean Age = 60 ± 4.9) receiving 100mg carbenoxolone 3 times daily compared to placebo for 6 weeks, in a double-blind randomised crossover study.

Significant improvement in verbal fluency and verbal memory after only 4 and 6 weeks treatment

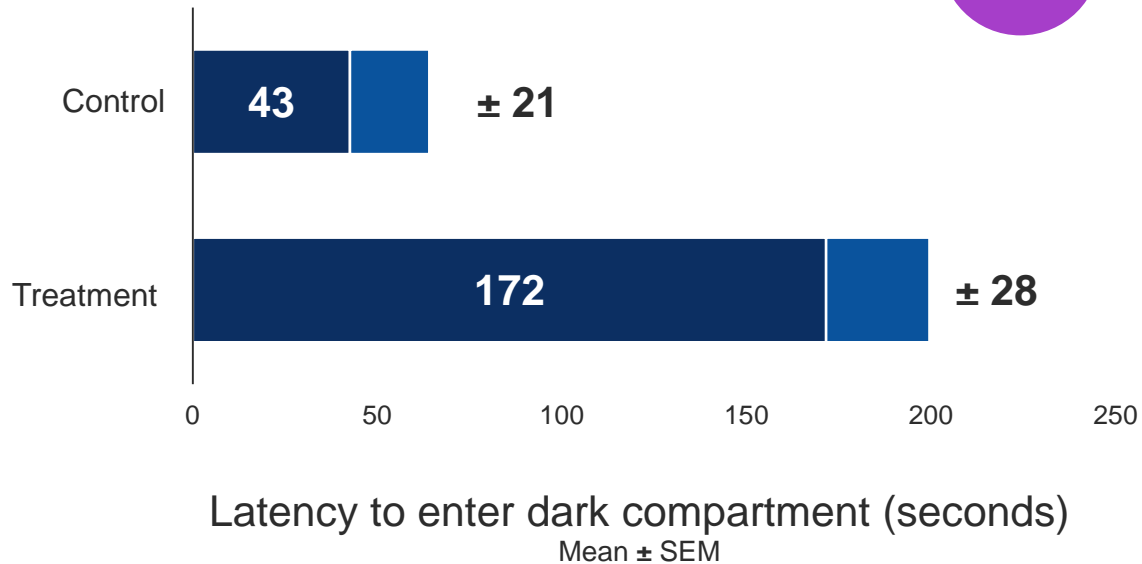
11 β -Hydroxysteroid dehydrogenase inhibition improves cognition function in healthy elderly men and type 2 diabetics
Sandeep et al., 2004 PNAS (vol. 101, no. 17) 6734-6739

Robust animal data with new candidate

Symptomatic and disease modifying effects in mouse models – AUD \$25 million invested pre-licensing by ACW

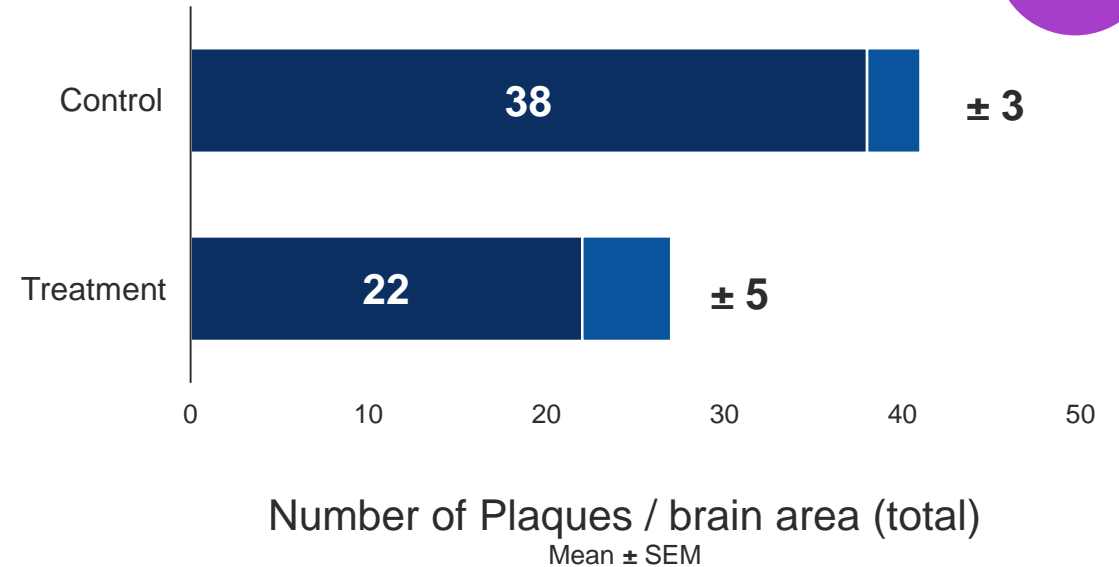
COGNITION: treatment 28 days

P=0.004



AMYLOID CLEARANCE: treatment 28 days

P=0.01



Significant improvement in cognition after only 28 days treatment, continuing out to 41 weeks

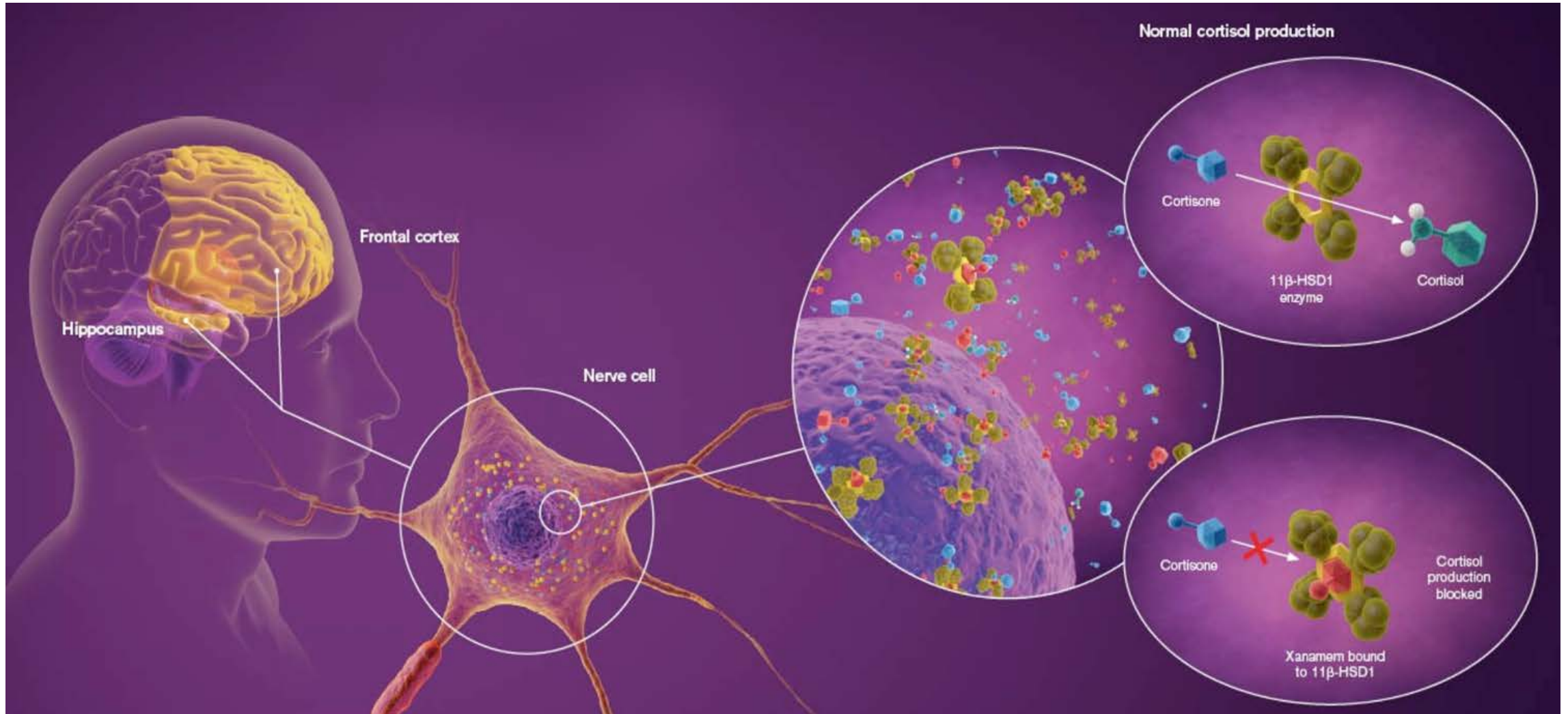
UE2316 in Tg2576 rodent model of Alzheimer's disease.
Sooy, et al., 2015. Endocrinology 156 (12) 4592-4603



Xanamem

Mechanism of action

Inhibition of 11 β HSD1, reducing brain cortisol production



Xanamem

- Actinogen's lead compound
- A novel, first in class, potent, orally bioavailable, brain-penetrant, 11 β HSD1 inhibitor¹
- Differentiated mechanism of action: blocking cortisol production in the brain
- Symptomatic and disease modifying effects *in vivo*¹
- Well-tolerated – dosed >100 patients/subjects: acceptable clinical safety, toxicity and PK/PD profile¹
- Effective human brain concentrations demonstrated¹
- XanADu – phase II clinical study underway, dosing subjects with mild AD dementia in USA, UK, AU
 - Fully funded following completion of ~A\$5.3 million capital raise in Nov 2017.
- Planning ongoing for additional studies and clinical indications
- A range of additional studies adequately funded following completion of ~\$16.5 million capital raising in May-July 2018
- Composition of matter IP coverage \geq 2031, patents granted in all major markets



1. Webster *et al.*, 2017, British J Pharmacol 174:396-408

Cortisol: a validated biomarker and target for AD

Cortisol and Alzheimer's

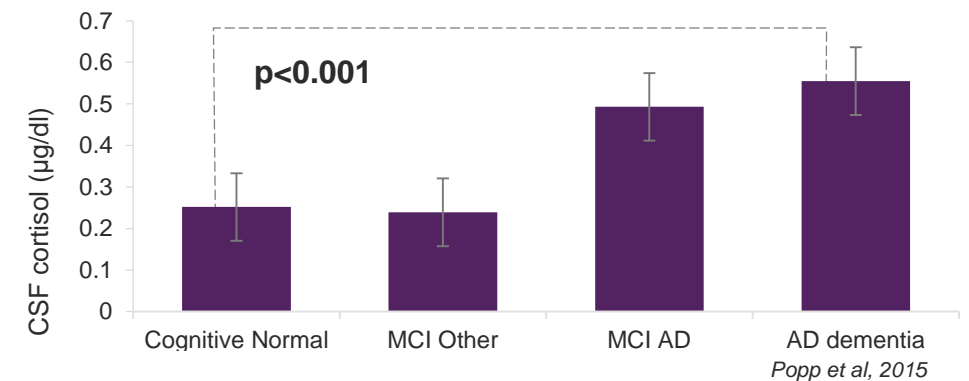
- Recent independent studies support the association between cortisol and AD development and progression¹⁻⁵
- Cognitive impairment in patients with neuroendocrine dysfunction⁶⁻⁹
- Compelling evidence provided by the Australian Imaging, Biomarker & Lifestyle Study of Ageing (AIBL) study (2017)⁵
 - **Subjects with higher plasma cortisol at much greater risk of developing AD**
 - Accelerated effect of A β + on decline in global cognition, episodic memory and attention

Xanmem

- Data presented at four major international medical congresses in 2016 – AAIC Toronto; CTAD San Diego; ICE Beijing; MMC Lisbon
- Pre-clinical and Phase I data published¹⁰⁻¹¹



MEAN CSF CORTISOL LEVELS



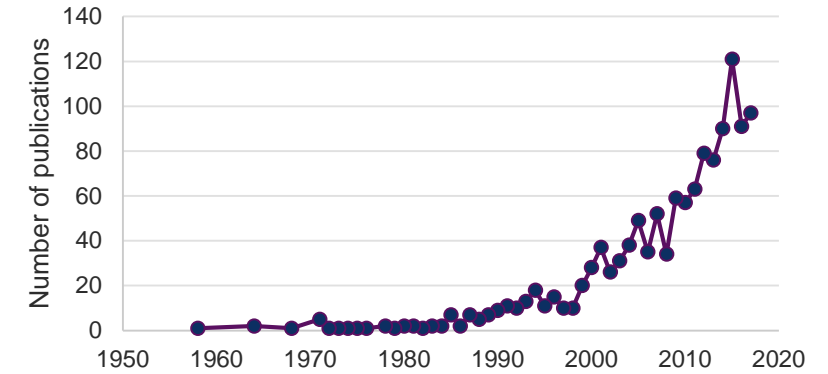
[1] Geerlings et al., 2015, Neurology 85: 1-8; [2] Lehallier et al., 2016, JAMA Neurology 73(2), 203-212; [3] Popp et al., 2015, Neurobiol. Aging 36:601–607; [4] Ennis et al., 2017, Neurology 88(4):371-378; [5] Pietrzak et al., 2017, Biol Psychiatry: Cognitive Neuroscience and Neuroimaging, 2:45-52; [6] Lupien et al., 2009, Nat Rev Neurosci 10:434–445; [7] Starkman et al., 1999, Biol Psychiatry 46: 1595–1602; [8] Lupien et al., 1998, Nat Neurosci 1:69–73; [9] MacLulich et al., 2005, Psychoneuroendocrinology 30:505–515; [10] Sooy et al., 2015, Endocrinology 156(12):4592-4603; [11] Webster et al., 2017, British J Pharmacol 174:396-408.

Cortisol, cognitive decline and AD: a growing body of literature

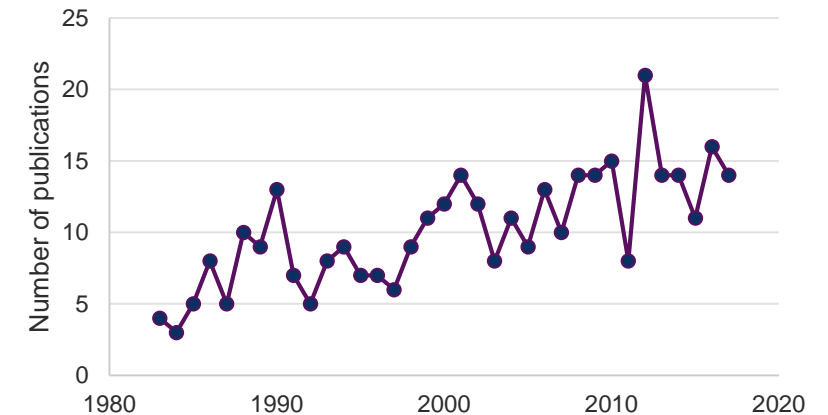
Recent relevant reviews:

- Cortisol: Mediator of association between Alzheimer's disease and diabetes mellitus? (Notarianni, 2017, *Psychoneuroendocrinology*)
- Unified theory of Alzheimer's disease (UTAD): implications for prevention and curative therapy. (Nehls 2016, *J Mol Psychiatry*)
- Is Dysregulation of the HPA-Axis a Core Pathophysiology Mediating Co-Morbid Depression in Neurodegenerative Diseases? (Du and Pang, 2015; *Front Psychiatry*)
- The impact of stress and glucocorticoids on memory. (Tatomir et al. 2014; *Clujul Med.*)
- Contribution of glucocorticoids and glucocorticoid receptors to the regulation of neurodegenerative processes. (Vyas and Maatouk, 2013; *CNS Neurol Disord Drug Targets*)
- Stress-induced cytokines and neuronal dysfunction in Alzheimer's disease. (Ricci et al., 2012; *J. Alzheimer's Dis.*)
- Local amplification of glucocorticoids in the aging brain and impaired spatial memory (Yau and Seckl, 2012; *Front. Aging Neuroscience*)

PUBMED:"CORTISOL AND COGNITION"



PUBMED: "CORTISOL AND ALZHEIMER'S"





XanADu – Phase II Trial

XanADu – Xanamem in Alzheimer's disease



Phase II double blind, randomised, placebo-controlled study to assess the efficacy and safety of Xanamem in participants with mild Alzheimer's disease*

- 145 patients enrolled (83% of total study cohort) and more than 101 patients already completed study**
- On track for last patient enrolled in Q4 2018 and top line results in Q2 2019



Xanamem treatment course
12 weeks



174
Mild Alzheimer's patients



Xanamem 10mg daily
for 12 weeks vs placebo



Trial conducted at 20 sites in
AUS, USA and UK

Primary and secondary endpoints are standard and experimental cognitive outcome measures used in Alzheimer's research: ADASCog14, ADCOMS, CDR-SOB, MMSE, RAVLT, NTB-ED

* Registered on Clinicaltrials.gov: NCT02727699

** As at 10 Sept 2018

Interim analysis – DSMB recommendation to continue trial without modification*



- Conducted on data from **first 50 evaluable XanADu trial patients**. Additional 37 patients' safety data included in the analysis
- **Safety and efficacy** data reviewed
- Interim Analysis undertaken by independent **Data Safety Monitoring Board (DSMB)**
- **Recommendation by DSMB to continue trial without modification**
- **No treatment related serious adverse events**
- Recommendation affirms the positive benefit-risk safety profile of Xanamem 10mg daily
- Supports progression of study as planned
- Underpins further development in other indications
- **22nd August 2018 - DSMB safety analysis of 125 patients reaffirmed continuation without modification.**

XanADu

* Announced 23 May 2018

Substantial Institutional investment in Actinogen*

Recognises potential and endorses strategy

- Positive interim analysis catalyses significant \$15M investment through Placement
- Leading investors enter register:
 - USA specialist biotech investor **Biotechnology Value Fund L.P.**
 - Australian institutions **Platinum Investments Management** and **Australian Ethical Investment**
- Strong endorsement - Placement price represents an **13.4% premium** to the 5-day VWAP
- **BVF cornerstones Placement** - largest shareholder with a **19.97% holding**
- Funding to advance the development plan through additional Xanamem studies.



* Announced 23 May 2018

New Xanamem studies – funded through May '18 capital raising

Enhancing value, broadening scope, strengthening data-set



New funding to advance Company's development plan

Focus on enhancing the data-set for Xanamem, broadening scope of use and adding substantial value to asset

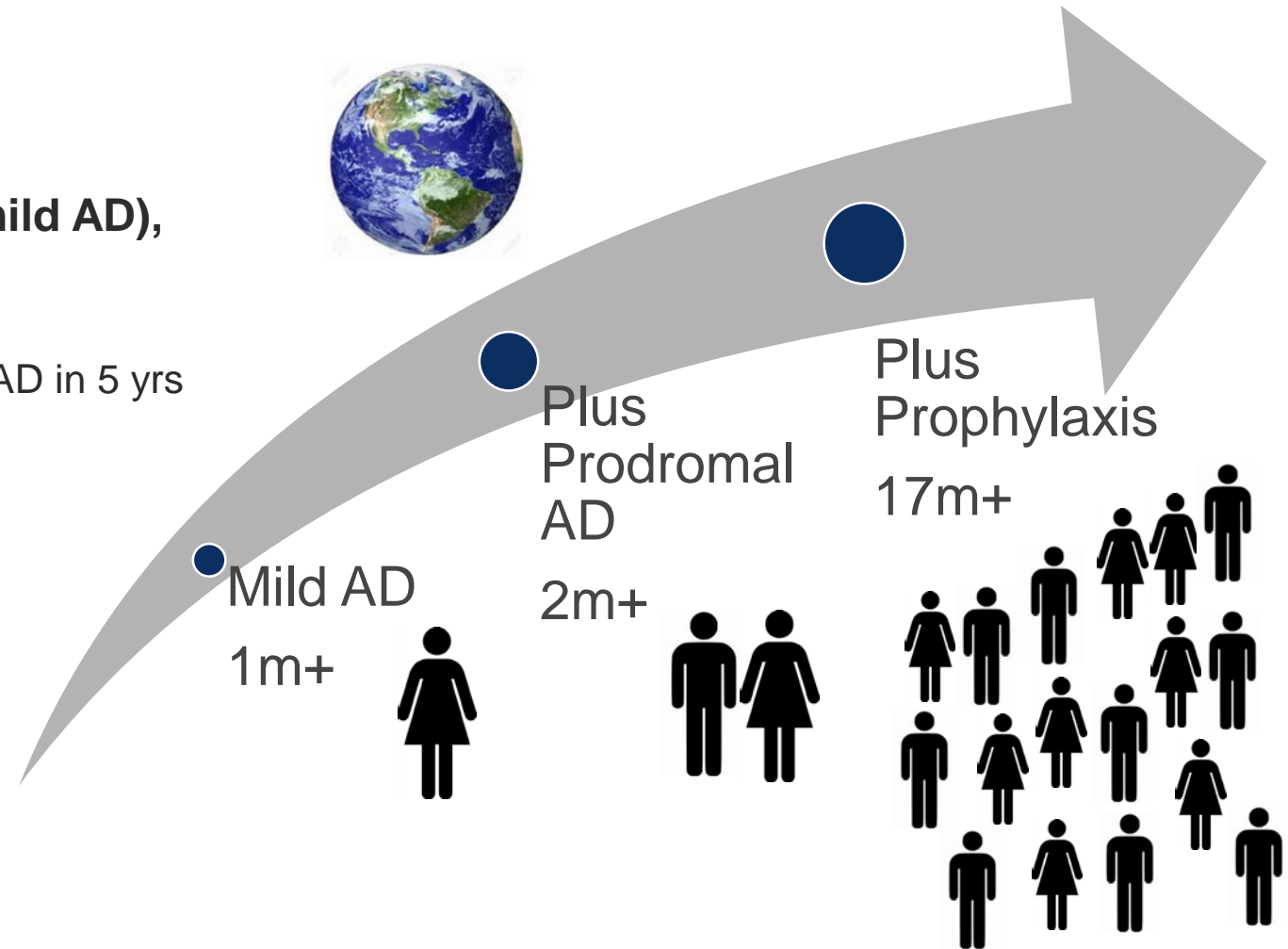
- **A Target Occupancy Study.** A highly specialised study that aims to accurately demonstrate the effect different doses of Xanamem has on the 11B-HSD1 enzyme in the human brain. The initial work on the Target Occupancy Study underway, with the results anticipated in Q2 2019.
- **A higher dose safety study.** To expand the safety data-set for Xanamem and allow for higher doses of the drug to be used, if required, including in non-Alzheimer's applications. This human study is expected to initiate in Q4 2018.
- **Additional safety toxicology studies.** To allow for longer treatment periods, as normally required by global regulatory authorities in the development of any drug. Likewise, these studies are expected to initiate in Q4 2018.
- **Market expansion opportunities – multiple new indications** to expand the potential use of Xanamem beyond Alzheimer's under evaluation - review of all potential indications will complete in the next few months.
 - diseases with possible cortisol induced cognitive impairment, including diabetes, depression, Parkinson's disease, schizophrenia
 - as well as conditions like post-traumatic stress disorder (PTSD) and post myocardial infarction



Market and Investment Opportunity

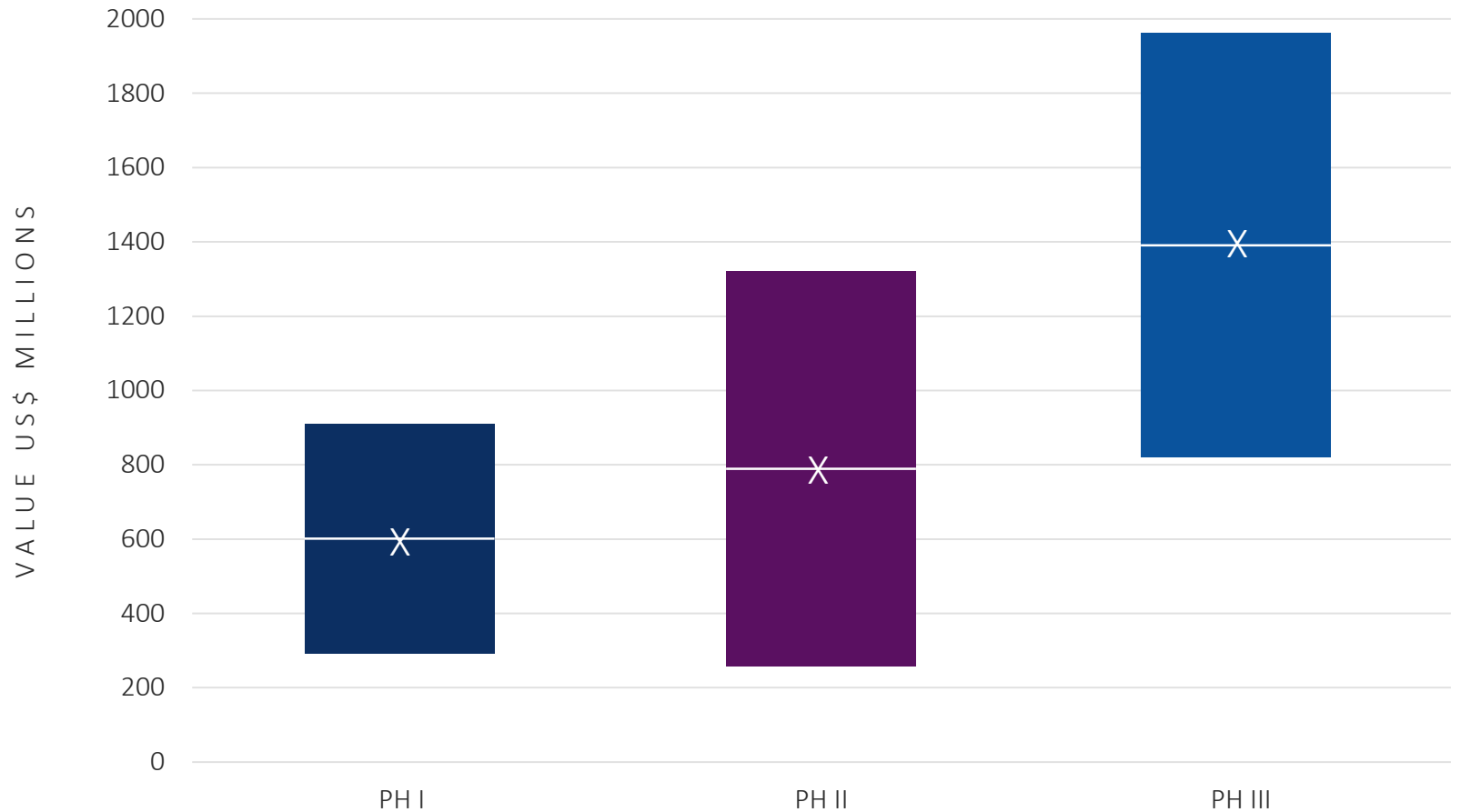
Large opportunity for Xanamem patient uptake in AD

- Huge commercial opportunity
- Peak sales potential >US\$5bn (base case, mild AD), assuming:
 - US launch 2024, ex-US (EU5, JP) 2025
 - 30% penetration (470,000 in US) of target mild AD in 5 yrs
 - \$19/day gross price in US at launch
- Upside potential for earlier use:
 - Prodromal AD
 - Prophylactic use
 - at-risk “cortisol-high” – 50% over 65yrs



Peer comparison

What big pharma companies are paying for acquisition of drug developers in the Alzheimer's space





Xanamem™ - summary

Summary



A huge market with a significant unmet medical need

Xanamem

- Differentiated, with a novel mechanism of action
- Small molecule - oral
- Numerous studies underway/in planning
- Solid IP out to at least 2031
- Potential utility in other indications

XanADu

- Fully funded to completion of XanADu
- Additional studies funded with May 2018 capital raise
- Interim Analysis – continue study without modification
- On track for last patient enrolled before end 2018
- 145 patients enrolled (83% of total); 101 completed



Substantial independent support for cortisol/Alzheimer's hypothesis



Highly experienced Board



Growing interest in Xanamem from pharma partners



A compelling investment opportunity

Let's not forget Alzheimer's

Remember to wear purple
on 21st September
World Alzheimer's Day!



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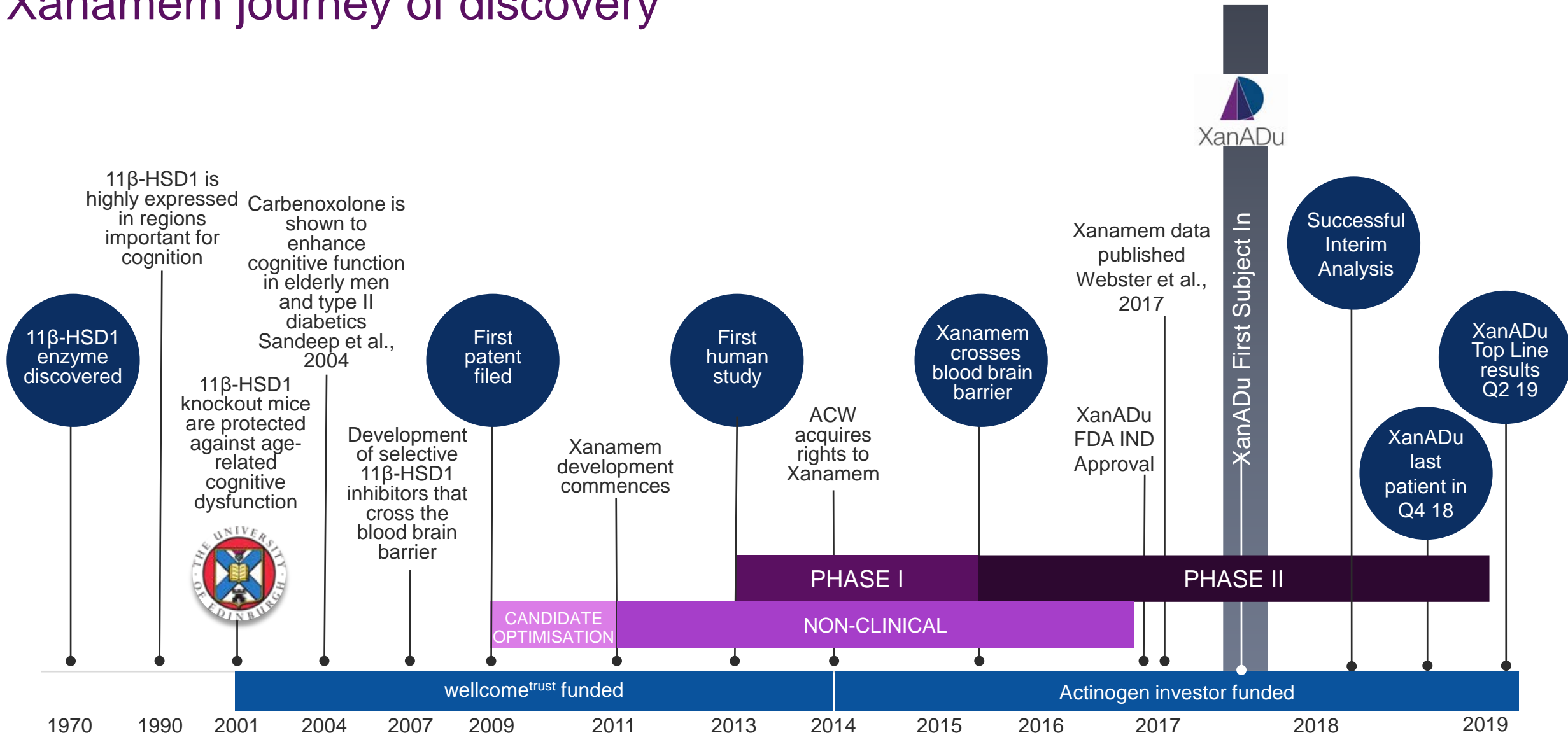


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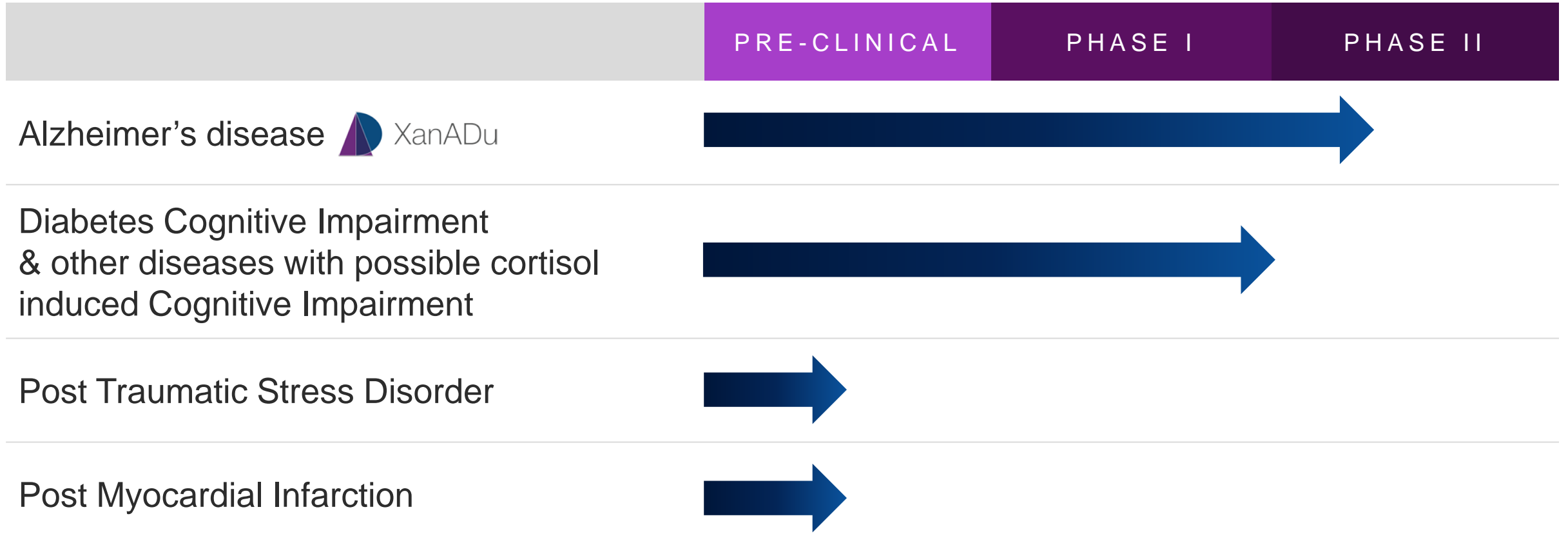


Appendix

Xanamem journey of discovery



Xanamem pipeline of indications, back-up compounds*



* Back-up compounds to Xanamem, licenced from Edinburgh University