ASX ANNOUNCEMENT

Xanamem Clinical Development and Investor Update

Sydney, 26 June 2019. Actinogen Medical (ASX: ACW, 'ACW' or 'the Company') is pleased to provide an update on the progress the Company is making with the ongoing clinical development program for Xanamem™. This update should be read in conjunction with the latest investor presentation (attached).

XanADu Phase II Clinical Trial

- The Company has made good progress in performing deeper analyses of the XanADu data to better understand the study outcomes.
- These data analyses are continuing, and confirmation of any findings will become apparent once correlated with the outcomes from the other ongoing preclinical and clinical studies described below.
- When all study outcomes are known, they will be consolidated and form part of a detailed strategic review of the future development of Xanamem, expected in 3Q CY2019.

XanaHES Phase I Higher Dose Safety Study

- This study, being conducted by Linear Clinical Research in Perth, is progressing well, with the final 20mg study subject expected to be enrolled this week.
- As previously announced, following a scheduled interim safety review, it was recommended that XanaHES continue – there do not appear to be any significant safety concerns with the 20mg daily dose.
- Results from this study will provide important data on using higher doses of Xanamem in future studies, if this is considered necessary.

Target Occupancy: Phase I PET Study

- This study is being conducted by Professor Chris Rowe and Professor Victor Villemagne at the Austin Hospital in Melbourne.
- This is a technically complex competitive binding, radio-labelled tracer PET imaging study, and the Company is breaking new ground with it.
- The study is progressing to plan, and to date, the 10mg and 20mg subject cohorts of once daily Xanamem have completed the trial. Subject cohorts investigating 5mg and 30mg will follow to provide further insights over a dose gradient of Xanamem.
- The study has generated encouraging results that are being used to refine the protocol to ensure the Company receives the maximal value from this important study.
- In order to complete this study in humans, the Company performed multiple experiments leading up to the development of the Phase I protocol, and given the outcomes of these experiments, the study results as a whole will only be discerned once all cohorts have been completed.

- The Company is pleased to confirm that initial results observed demonstrate that Xanamem inhibits the 11β-HSD1 enzyme in the brain (refer to slide 11 of the attached Investor Presentation).

Target Occupancy: Homogenate Binding Studies

- This suite of complex in-vitro studies is being conducted in Birmingham, UK, and is designed to further confirm and enhance the data and conclusions from the Target Occupancy study.
- The suite of studies includes autoradiography involving competition, saturation and enzyme activity studies at varying concentrations of Xanamem

Pre-Clinical Toxicology Studies

- Long-term toxicology studies in two non-primate species are mandated by regulatory agencies for all drugs prior to the commencement of longer-term clinical studies.
- The long-term toxicology studies in rat and dog are progressing as planned and will read-out over the rest of 2019 and into 2020.
- Encouragingly and importantly, the feedback to date indicates no unexpected toxicological or safety concerns with longer term exposure to Xanamem.

Expansion Opportunities into New Indications

- The Company is progressing the planning for the new Xanamem indications of cognitive impairment in mood disorders and schizophrenia.
- Consolidation of a clinical development plan for these indications will occur over the next few months in consultation with an expert Advisory Board, and the Company looks forward to providing an update in due course.

Manufacturing of Xanamem

- In preparation for further clinical development of Xanamem, the Company has undertaken a rigorous process of selecting a Contract Development and Manufacturing Organisation (CDMO) with the expertise and capabilities to optimise the synthesis of Xanamem and scale up production required for clinical development and commercialisation.
- The Company is pleased to announce that it has recently selected Corden Pharma LLC (Liestal, Switzerland) as its new CDMO partner.
- Corden Pharma will provide various services to the Company including the manufacturing of the active pharmaceutical ingredient (API), manufacturing of drug product, and regulatory and packaging services. Corden has full commercial-scale capabilities.

Partnering Update

- In early June, the Company participated in the BIO 2019 International Convention, the world's largest biotech partnering meeting attracting pharmaceutical and biotech companies from around the world.
- Actinogen held more than 20 partnering meetings where the recent study results, progress to date, and the plans for the ongoing development of Xanamem were discussed.
- Actinogen received encouraging feedback from all the prospective partners, all of whom requested to be kept updated on ongoing study progress and the Company's plans.

Updated Investor Presentation (attached)

- The latest investor presentation highlights progress achieved to date.
- Particular emphasis is made to the impressive pharmacodynamic effects of Xanamem from the XanADu study (slide 9); the preliminary data from the Target Occupancy study (slides 10 and 11); and the interim review of the XanaHES higher dose safety study (slide 12).
- Also included is additional detail on the opportunity presented by the new indications of cognitive impairment in mood disorders and schizophrenia (slides 15-20 and 23-27).

Actinogen looks forward to updating investors on the progress of all of the ongoing studies, and the outcome of the Company's strategic review once more of the results become available.

ENDS

Actinogen Medical
Dr. Bill Ketelbey
CEO & Managing Director
P: +61 2 8964 7401
E: bill.ketelbey@actinogen.com.au
@BillKetelbey

Investor and Media Enquiries
Arthur Chan
WE Buchan
M: +61 2 9237 2805
E: arthurc@we-buchan.com

About Actinogen Medical

Actinogen Medical (ASX: ACW) is an ASX-listed biotechnology company focused on innovative approaches to treating cognitive decline that occurs in chronic neurological and metabolic diseases. Actinogen Medical is developing its lead compound Xanamem, as a promising new therapy for Alzheimer's disease, a condition with multibillion-dollar market potential and material human impact. In the US alone, the cost of managing Alzheimer's disease is estimated to be US$250bn and is projected 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. In addition, Actinogen is currently planning an expanded clinical development program for Xanamem in cognitive impairment in mood disorders and schizophrenia. In the US alone, the collective economic costs of mood disorders and schizophrenia are estimated to exceed $550bn, with the burden increasing every year. The cognitive dysfunction associated with these conditions is significantly debilitating for affected patients, with a substantial unmet medical need for novel, improved treatments.

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. There is a strong association between chronic stress and excess cortisol that leads to changes in the

brain affecting memory. The 11β-HSD1 enzyme is highly concentrated in the hippocampus and frontal cortex, the areas of the brain associated with cognitive impairment in neurological diseases, including Alzheimer's disease, mood disorders and schizophrenia.

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 has fully enrolled 186 patients from 25 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.

About XanaHES

XanaHES is a Phase I, randomised, single blinded, central reader blinded, placebo-controlled, dose escalation study to assess the safety and tolerability of Xanamem™ 20mg & 30mg once daily in healthy elderly volunteers. Changes in cognitive performance from baseline to end-of-treatment will be measured as an exploratory efficacy outcome.

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

Investor Presentation

A novel approach to treating cognitive impairment and Alzheimer's disease

Dr. Bill Ketelbey: CEO & MD

June 2019

Actinogen Medical

Company Overview

Actinogen is developing innovative treatments for cognitive impairment associated with neurological and metabolic diseases, with an initial focus on Alzheimer‘s disease

Xanamem - lead compound

Cognitive impairment focus

Clinical stage asset

Potential value upside

De-risked opportunity

Experienced leadership

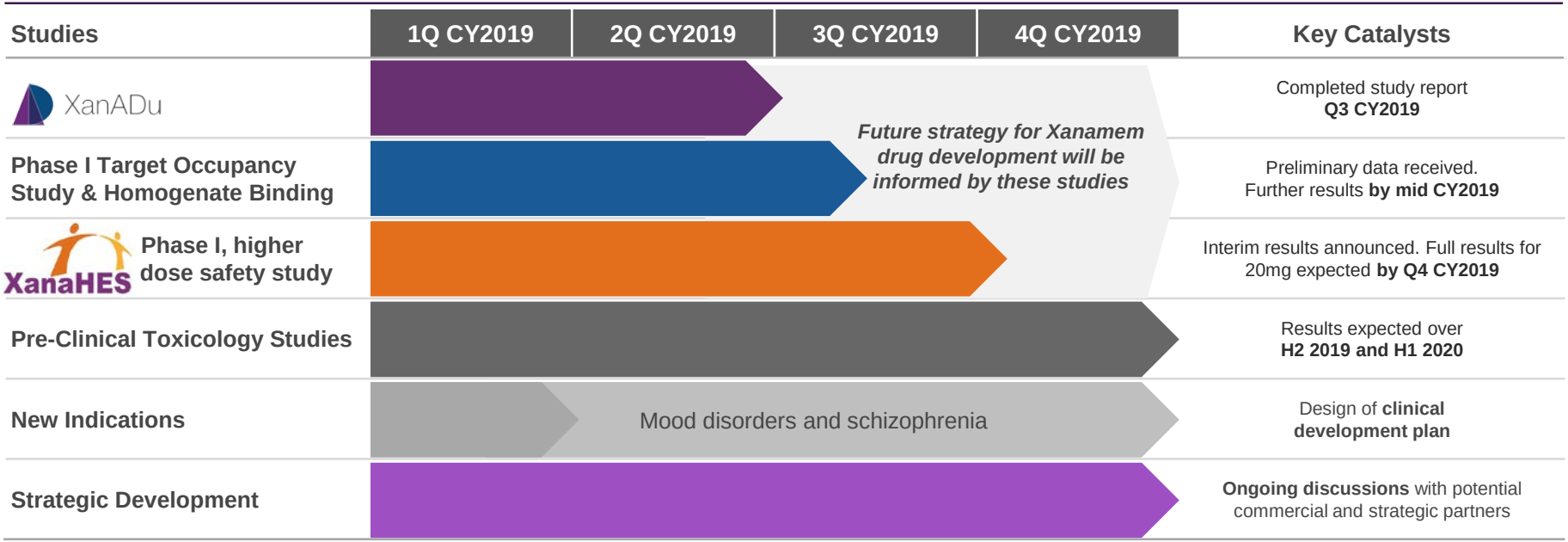
Xanamem

A novel drug designed to inhibit cortisol production in the brain, with the potential to treat cognitive impairment

 **Xanamem overview**	▪ **A novel, first in class, potent, orally bioavailable, brain-penetrant, 11β-HSD1 inhibitor** ▪ **Differentiated mechanism of action:** inhibiting cortisol production in the brain ▪ **Symptomatic and disease modifying effects *in vivo* (pre-clinical)**
 **XanADu study**	▪ **Alzheimer's disease Phase II clinical study completed** – efficacy end points not achieved – potent pharmacodynamic modulation of cortisol-related hormones – well-tolerated with no safety concerns – sub-analyses underway
 **Ongoing development**	▪ **Positive initial results from Phase I target occupancy studies** ▪ **Positive interim safety review of XanaHES higher dose study** ▪ **Positive initial data form long-term animal toxicology studies** ▪ **New indications selected: mood disorders (bipolar) and schizophrenia**

Development Pipeline and Upcoming Catalysts

Significant upcoming milestones across first half 2019



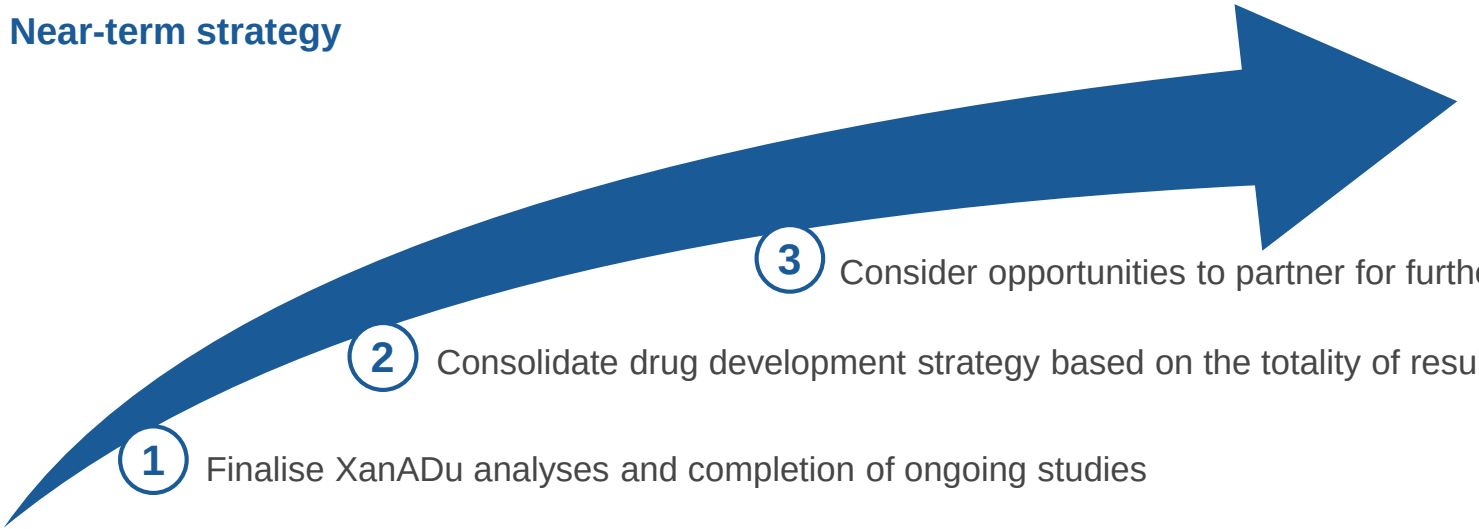
Actinogen is fully funded to complete all current studies

Commercial Strategy

Xanamem development and commercial opportunities informed by totality of output from current studies

Xanamem has demonstrated to be a **safe, brain penetrant, orally available, selective 11β –HSD1 inhibitor** with significant pharmacodynamic effects on cortisol-related hormones

Near-term strategy



3. Consider opportunities to partner for further development
2. Consolidate drug development strategy based on the totality of results
1. Finalise XanADu analyses and completion of ongoing studies

Xanamem Drug Development Pipeline

XanADu Phase II clinical trial design, endpoints and initial results

Clinical Target Occupancy and Homogenate Binding Studies

XanaHES Phase I higher dose safety study

Pre-Clinical long-term in vivo safety and toxicology studies

XanADu is one part of a larger development program

The ongoing comprehensive review of the data and results from XanADu and the additional studies will inform the optimal clinical development path

XanADu

Multiple endpoints and sub analyses will allow insight into Xanamem's potential and where it is most effective

Sub-group analyses of results underway to understand future treatment opportunities

XanaHES

Assess safety and tolerability of higher doses, with an exploratory efficacy assessment included

Interim safety review - recommendation to continue with protocol enhancements - May 29th

Designed to allow higher doses in future trials

Totality of results assessed by Actinogen and expert Clinical Advisory Board

Phase I Target Occupancy, & Homogenate Binding Studies

Measures effects of different Xanamem doses on inhibiting the 11β-HSD1 enzyme in the brain

Initial clinical results received - ongoing studies will confirm and inform optimal Xanamem dosing required in future trials

Additional Toxicology Studies

Pre-clinical safety and toxicology studies to allow for longer treatment periods

As routinely required by regulators in later stage clinical trials (i.e. Phase III)

The totality of results will inform further Xanamem development

XanADu Results

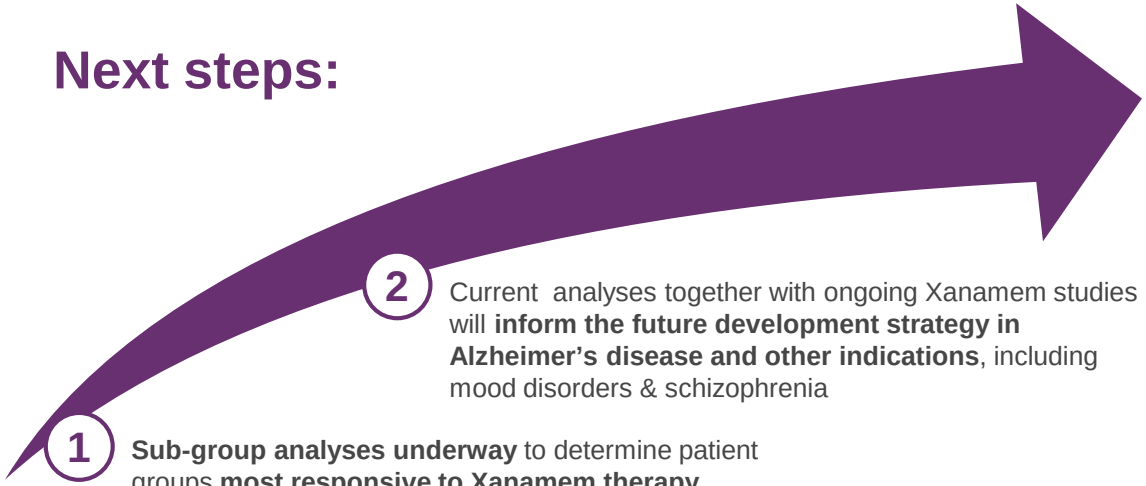
Initial results announced 7th May 2019

Pharmacologically active drug - potent pharmacodynamic modulation of cortisol-related hormones

Strong safety profile

Primary and secondary endpoints[1] did not achieve statistical significance

Next steps:



2 Current analyses together with ongoing Xanamem studies will **inform the future development strategy in Alzheimer's disease and other indications**, including mood disorders & schizophrenia

1 **Sub-group analyses underway** to determine patient groups **most responsive to Xanamem therapy**

XanADu's results will inform future clinical development

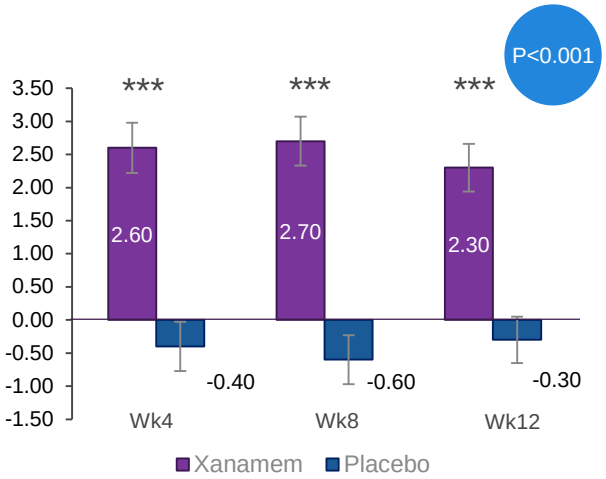
1. ADAS-COG14: Alzheimer's Disease Assessment Scales – Cognitive Subscale Score (version 14); ADCOMs: AD COMposite Scores (composite data derived from ADAS-COG14, CDR-SOB and MMSE); CDR-SOB: Clinical Dementia Rating Scale – Sum of Boxes; RAVLT: Rey Auditory Verbal Learning Test; MMSE: Mini-Mental Status Examination; NTB: Neuropsychological Test Batteries; NPI: Neuropsychiatric Inventory

XanADu Study – Pharmacodynamic Results

Xanamem 10mg once-daily resulted in early and significant pharmacodynamic modulation of cortisol-related hormones throughout the 12-week study

ACTH: 12 weeks treatment

LS Mean Changes from baseline (picomol/L)

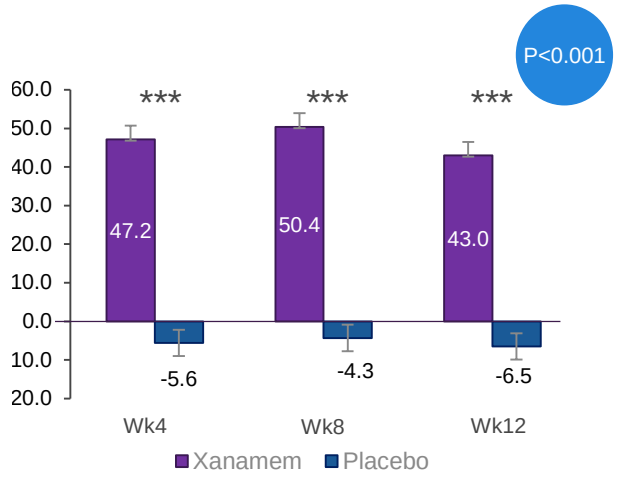


Androstenedione: 12 weeks treatment

LS Mean Changes from baseline (µg/mL)

DHEA-S: 12 weeks treatment

LS Mean Changes from baseline DHEA-S (µg/dL)



No change in testosterone, particularly in women

Results from the XanADu studies demonstrate significant PD effect of Xanamem 10mg in Alzheimer's disease

Source: XanADu results; data are presented as LS (least squares) means ± standard error of the mean (SEM). ***:p<0.001
ACTH: adrenocorticotropic hormone; DHEA-S: Dehydroepiandrosterone sulfate. LS mean changes in testosterone were not significant.

Xanamem – Phase I Target Occupancy Study & Homogenate Binding Studies

To assist with confirming and optimising Xanamem dosing

Aim

To accurately demonstrate the effects different doses of Xanamem have on inhibiting the 11β-HSD1 enzyme in the human brain.

Phase I Target Occupancy studies

Competitive binding, radio-labelled tracer PET imaging assay

- Subject cohorts tested with Xanamem at 5mg, 10mg, 20mg, and 30mg doses.
- Preliminary data available from 10mg dosing (next slide)

In vitro Homogenate Binding Studies

Enzyme occupancy competition studies, saturation binding studies, and enzyme activity assays in rat and human brain sections (ongoing)

To correlate enzyme occupancy and enzyme activity at incremental doses of Xanamem

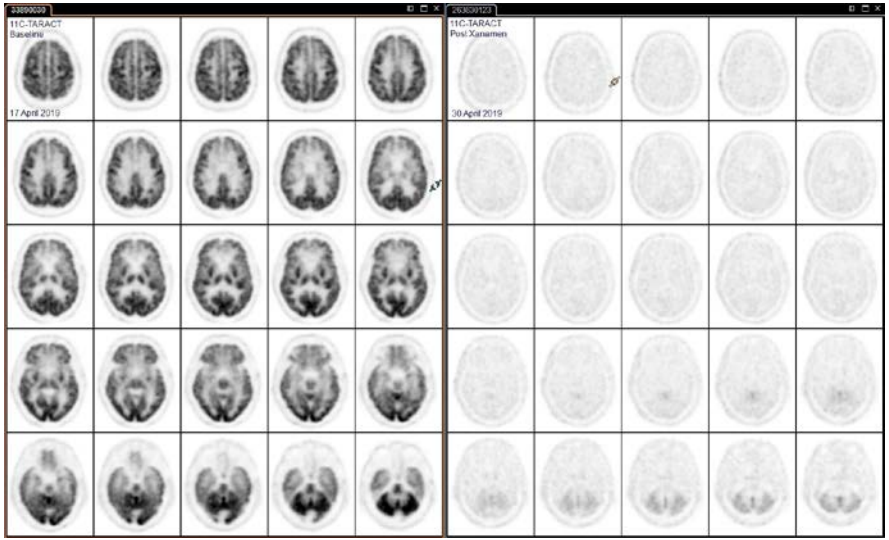
Key studies to help interpret XanADu results and support future clinical development strategy

Phase I Target Occupancy Study: Preliminary Results

Phase I target occupancy study demonstrates that 10mg Xanamem dosed for seven days significantly occupies neuronal 11β-HSD1 throughout the brain

Baseline

Post Xanamem



51% - 85% occupancy, dependent upon brain region and study subject

- **Further study data available Q3 and into Q4**
- Additional cohorts at 5mg, 20mg, and 30mg Xanamem are ongoing or planned

Phase I Target Occupancy supports Xanamem as a potent, orally bioavailable and brain-penetrant 11β-HSD1 inhibitor

XanaHES Xanamem in Healthy Elderly Volunteers

Actinogen Medical

Phase I double-blind, randomised, placebo-controlled, dose escalation study to assess the safety and efficacy of Xanamem in healthy elderly volunteers

Aim

Expand the Xanamem safety dataset - evaluate **potential for higher drug doses** to be used in future clinical trials

Cognition assessed through computerised cognitive efficacy tests (Cogstate test battery)

Two Dose Cohorts

- **Cohort 1:** 42 subjects randomised to receive either 20mg Xanamem or placebo daily for twelve weeks (ongoing)
- **Cohort 2:** 42 subjects may be randomised to receive 30mg Xanamem or placebo daily

Continuation Recommended

- On 29th May 2019 – Dose Escalation Committee safety review of first 34 subjects recommended trial continuation, with protocol enhancements

Completion

Interim results announced

Full results for 20mg expected **by Q4 CY2019**

Key study to support future clinical development strategy

Xanamem – Long-Term Safety and Toxicology Studies

Aim

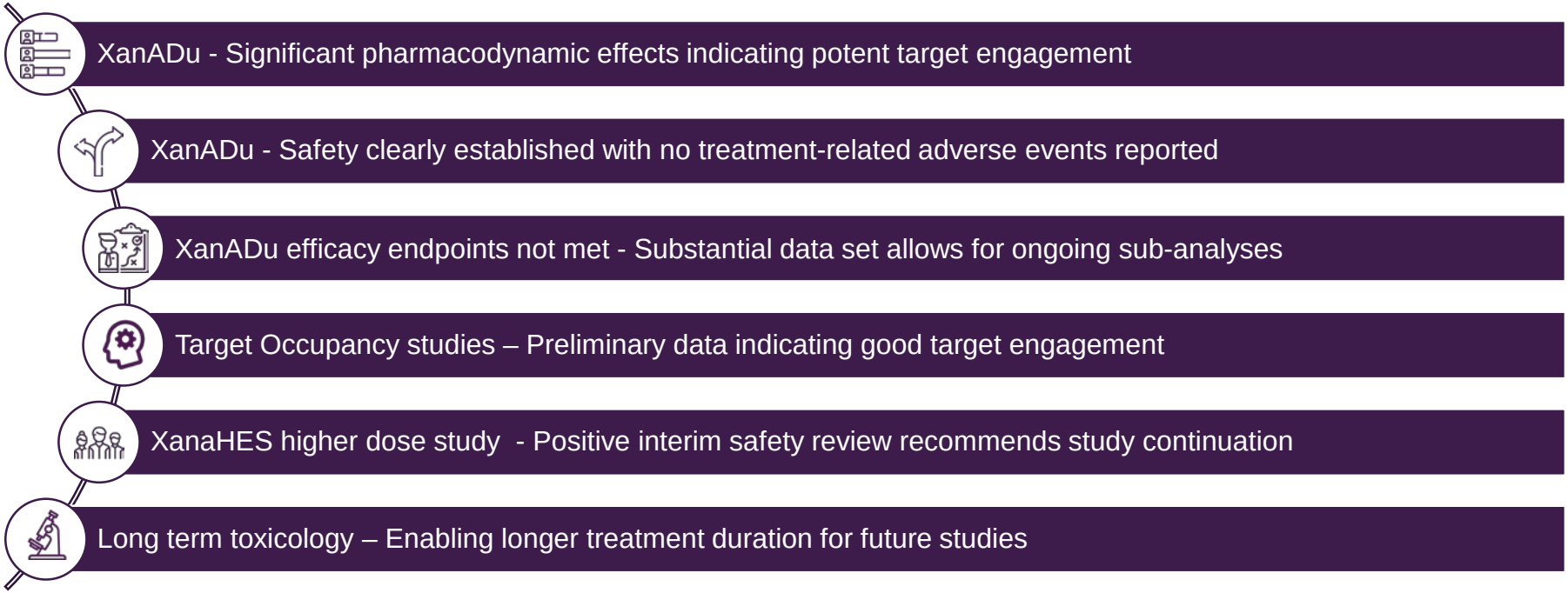
Evaluate safety and toxicology in rodent (six months) and dog (nine months) studies in preparation for Phase III development

- Studies **required by all regulators - FDA**
- Will allow future **clinical studies beyond 12 weeks**
- Studies ongoing

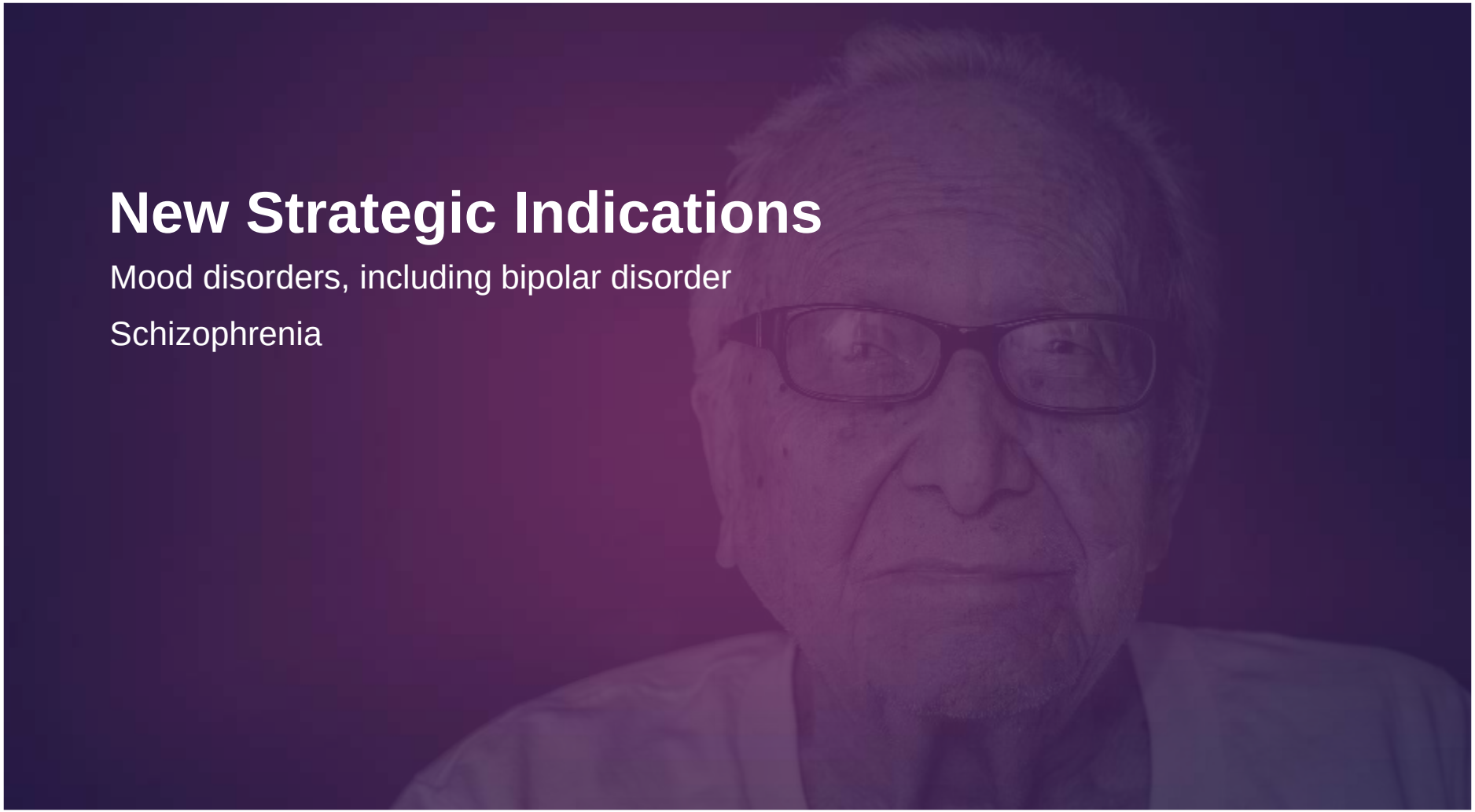
Key study to support future clinical development strategy

Totality of data from XanADu and ongoing Xanamem studies will inform future clinical development [1]

Data from XanADu and nine additional studies will read out over the coming months



1. Results from XanADu, and the additional studies initiated since mid-2018



New Strategic Indications

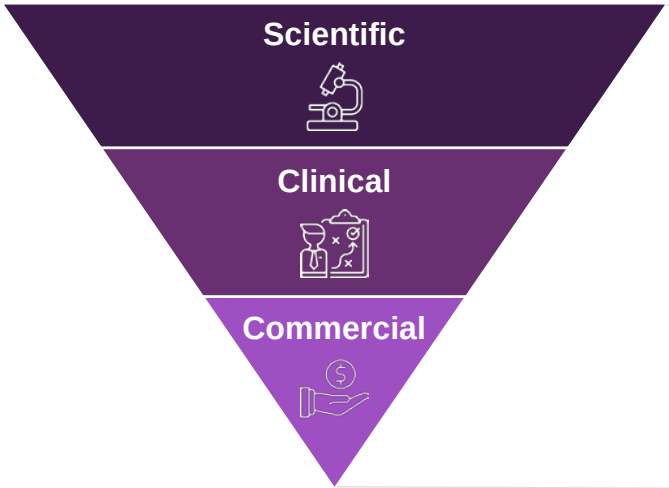
Mood disorders, including bipolar disorder

Schizophrenia

Assessment of New Target Indications

Following extensive scientific, clinical, and commercial review, cognitive impairment in mood disorders and schizophrenia selected as the next indications for development and commercialisation of Xanamem

12 indications assessed



Cognitive impairment in mood disorders and schizophrenia

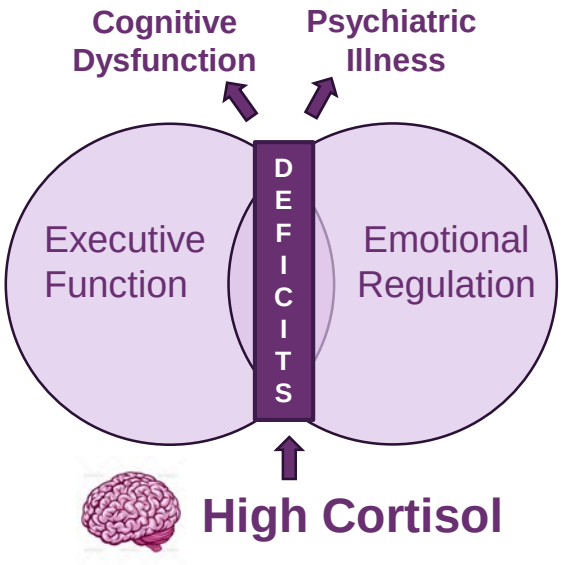
- Significant clinical interest in trialling Xanamem in a range of medical conditions associated with raised cortisol
- Potential indications assessed for association between raised cortisol and cognitive impairment, and Xanamem's potential to be an effective treatment
- Key considerations are clinical development path and unmet medical need
- Market analyses reveal substantial commercial opportunities – including population size, current standard of care, pricing and competitive landscape

A specialist Advisory Board will assist Actinogen to design the most appropriate clinical development plan for Xanamem

Cortisol in Mood Disorders & Schizophrenia

Overview of Clinical Rationale: Cognitive impairment can be a debilitating feature of mood disorders and schizophrenia; both diseases exhibit raised cortisol levels

- Hypothalamic–pituitary–adrenal (HPA) axis dysfunction has been well-described in mood disorders[1]
- Hypercortisolaemia may be central to the pathogenesis of both **depressive symptoms** and **cognitive deficits:**
  - Severe mood disorders (**depression, bipolar disorder**)
  - Psychotic disorders (**schizophrenia**)
- Current treatments only slightly improve but **do not normalise cognition**
- Overlapping neural networks supporting executive function & emotional regulation[2]



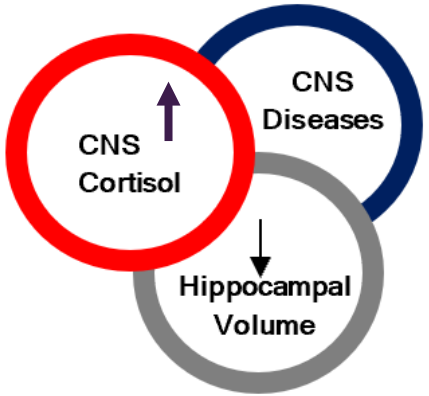
Opportunity for Xanamem to be developed and positioned as a cognitive enhancer in new indications

[1] reviewed in Young, 2004, Stress, 7(4):205-208; [2] Etkin et al 2013, Dialogues Clin Neurosci 15(4):419-29

Raised Cortisol & Cognitive Decline in Mood & Psychotic Disorders

The link between raised cortisol, decreased hippocampal volume, and cognitive dysfunction in mood disorders

- Post-mortem brain study: Elevated mRNA levels of steroid-producing enzymes, **including 11β-HSD1, in two brain regions associated with depression and bipolar disorder**[1]
- **Cortisol and Hypothalamic-Pituitary-Adrenal Axis in Depression**: cortisol may reduce/impair neurogenesis in hippocampal brain regions, associated with depression[2]
- **Late-life depressed** patients had significantly **smaller hippocampal** & total brain volumes, associated with higher plasma cortisol levels at awakening and after dexamethasone challenge[3]
- **Elevated cortisol levels** in individuals at **increased risk for psychosis**, especially those who **subsequently develop** psychosis[5,6]



Hippocampal volume – potential biomarker

Strong links between raised cortisol, HPA axis dysregulation, and cognitive issues in mood & psychiatric disorders

[1] Qi et al, 2018, Brain Pathology 28(4):536-547; [2] Belmaker & Agam, 2008, New England Journal of Medicine, 358:55-68; [3] Geerlings & Gerritsen, 2017, 82(5):339-350; [4] Cullen et al, 2014, Psychoneuroendocrinology, 46:1-13; [5] Walker et al, 2013, Biological Psychiatry, 74:410-417.

Significant Medical & Commercial Opportunities

Large patient populations and economic costs suggest a high unmet need with significant market opportunity for Xanamem to be used in combination with current therapies in order to address cognitive decline

	Depression	Bipolar disorder	Schizophrenia
Prevalence in the US[1]	16m	6m	2m
Estimated economic cost of disorder to the US system	~US$200bn *In 2016, a 21% increase from 2005[2]*	~US$202bn *In 2015 in Bipolar I disorder[4]*	~US$154bn *In 2013[6]*
Global sales forecasts for disorder treatments	~US$5.0bn in 2018 Forecast ~US$9.5bn in 2024[3]	~US$0.4bn+[5]	~US$8.9bn sales in 2018 Forecast ~US$10.1bn in 2024[7]
Cognitive issues in current patient population (prevalence)	**85-95%**	**40-60%**	**75%**
Currently available treatments for cognition[1]	**Significant treatment gap**	**None**	**None**
Competitive landscape (cognitive enhancers)	**One approved anti-depressant with limited efficacy and not specifically approved for cognition**	**No industry led trials for cognitive enhancers**	**Limited assets in development pipeline but none that specifically addresses raised cortisol**

1. Bio-Link Market Analyses – Depression and Schizophrenia; 2. Greenberg PE, et al (2015) *J Clin Psychiatry*. 2015; 76(2):155–162; 3. Source: EvaluatePharma – depression, note: Trintellix (vortioxetine, Lundbeck/Takeda) only approved therapy with label supporting cognitive enhancement; 4. Cloutier, M et al (2018) *J Affective Disorders*, Volume 226, 45-51; note: this is for Bipolar I disorder, a subset of bipolar disorder. 5. EvaluatePharma – bipolar disorder; 6. Cloutier, M et al (2016) *J Clin Psychiatry*, 2016 Jun;77(6):764-71; 7. EvaluatePharma - schizophrenia

Competitive Landscape in Mood Disorders and Schizophrenia

Current cognitive enhancers pipeline is limited, with only one approved antidepressant treatment which *may* improve cognitive improvement, resulting in a significant opportunity for Xanamem

Depression[1]

- **One FDA approved** antidepressant with language around cognitive improvements, but no specific label claim
  - Trintellix® (vortioxetine – Takeda/ Lundbeck)
- Spravato™ (esketamine, JNJ) formally tested for cognitive endpoints in Phase III trials
  - FDA label shows **potential drug induced cognitive impairment**
- **None specifically address hypercortisolaemia**

Bipolar disorder

- **Academic trials - no industry led trials for cognitive enhancers**
- Six assets in academic sponsored clinical trials where cognition is evaluated – **none specifically address hypercortisolaemia**
  - Lurasidone, pIII
  - Vortioxetine, pII
  - JNJ-18038683,pII
  - JNJ-39393406, pII
  - Erythropoietin, pII
  - Methylphenidate, pII

Schizophrenia

- Four active Phase II assets targeting cognition expected to read out within 2 yrs (no Phase III) – **none specifically address hypercortisolaemia**
  - 2019: BI-425809 (Boehringer Ingelheim);
  - 2019: RG1662 (Roche)
  - 2019: ASP4345 (Astellas)
  - 2020: BIIB104 (Biogen[2])
- MATRICS is the primary cognitive endpoint
- Potentially up to four additional assets appear to be in development[3]

A limited pipeline presents an opportunity for innovation in mood disorders & schizophrenia

1. Including major depressive disorder, seasonal affective, post-partum
2. Formerly known as PF04958242
3. Publicly available information unclear – potentially discontinued

Summary

Summary

Actinogen is developing innovative treatments for cognitive impairment associated with neurological and metabolic diseases with an initial focus on Alzheimer‘s disease

Xanamem - lead compound

Differentiated with a novel mechanism of action
First-in-class, brain penetrant, orally active, small molecule, inhibitor of 11β-HSD1 enzyme
Xanamem mechanism of action validated by independent research on the cortisol hypothesis

Targeted strategic market focus

Initially focused on developing a treatment for Alzheimer's disease
Addressable market worth >US$7.5bn with unmet needs and potential upside.
Target indication underpinned by efficacy results from animal model studies.
Mood disorders and schizophrenia identified as additional opportunities

Clinical stage asset

Advanced clinical stage program assessing Xanamem in Alzheimer’s disease and cognitive impairment in other neurological conditions. Complementary higher dose and target occupancy phase I studies will inform future development

Potential value upside

Totality of existing studies will inform further development and commercial potential of Xanamem

De-risked opportunity

Fully funded programs
Initial data from additional studies indicate brain penetration, good target occupancy and safety profile

Experienced leadership

Board and Management with significant drug development and corporate experience, supported by key opinion leaders and Xanamem discovery team

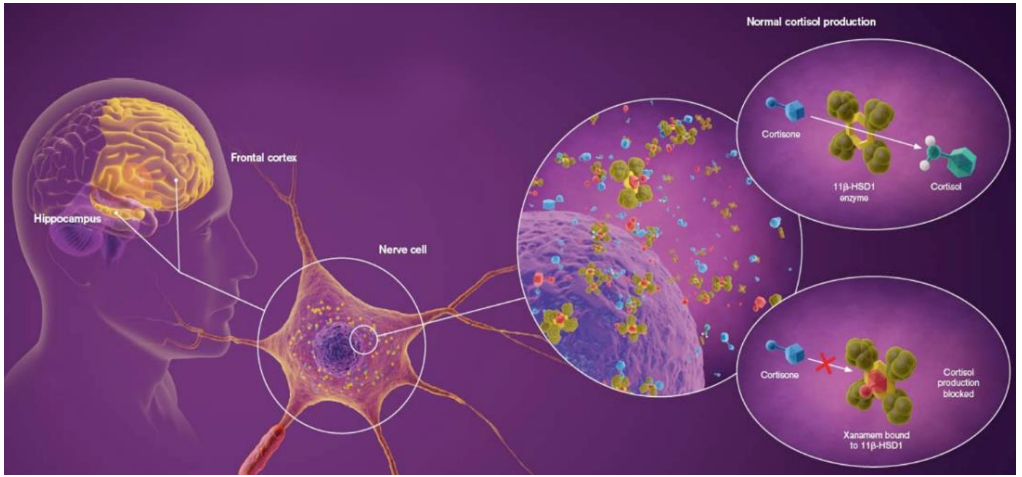
Appendix:
New Indications – Disease Background

Cognitive Impairment in Mood Disorders & Schizophrenia

Cognitive impairment can be a debilitating feature of mood disorders and schizophrenia – conditions exhibiting raised cortisol levels

- High cortisol levels are found in severe mood disorders, particularly depression and bipolar disorder, and psychotic disorders (such as schizophrenia)
- Increased cortisol may cause or exacerbate cognitive impairment and depressive symptoms
- The continuum model of mood disorders provides for a broad spectrum and large population of relevant patients
- While some incumbent treatments slightly improve cognition they do not normalise it

Xanamem's differentiated mechanism of action may improve neurocognitive functioning and attenuate depressive symptoms



New indications represent a spectrum of inter-related disorders associated with raised cortisol and cognitive impairment

Cognitive Impairment Associated with Depression

Overview of Clinical Rationale & Unmet Need

- Cognitive deficits in depression are clinically significant and include reduced executive function[1], attention, memory & cognitive speed[2]
- Cognitive decline can lead to **poor functional outcome** & potentially **non-response to treatment**
- **Cognitive symptoms present in 39−44% of depressed** patients in remission[3]
- Certain antidepressants may positively effect cognitive speed and memory, but a significant proportion of patients do not recover baseline cognitive levels after clinical remission[4]
- **Treatment guidelines do not address cognitive features of depression**

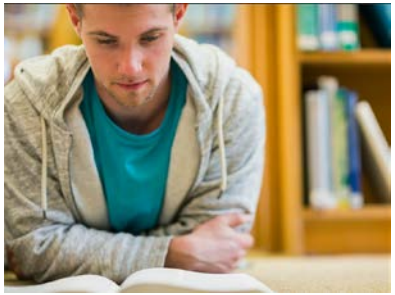
Significant unmet need for cognitive enhancement in depression

[1] Executive function: cognitive flexibility, working memory and inhibition - ability to integrate thought and memory into a task; [2] Pan et al., 2017, CNS Neurol Disord Drug Targets 16(8):891-899; [3] Conradi et al., 2011, Psychological Medicine 41(6):1165-1174; [4] Trivedi & Greer, 2014, J Affective Disorders 152-154:19-27

Cognitive Impairment Associated with Schizophrenia (CIAS)

Overview of Clinical Rationale & Unmet Need

- Schizophrenia: complex disorder with array of symptoms – positive, negative & cognitive
- High prevalence of **cognitive decline (30 – 75%)** in schizophrenic patients[1]
- CIAS usually precedes the onset of positive symptoms[2]
- **Older anti-psychotic medications may worsen CIAS**[3,4] possibly via modulation of dopamine and muscarinic receptors[5]
- Novel anti-psychotics do not improve cognition
- Cognitive decline is #1 reason for failure of schizophrenic patients to be **productive & re-integrate into society**



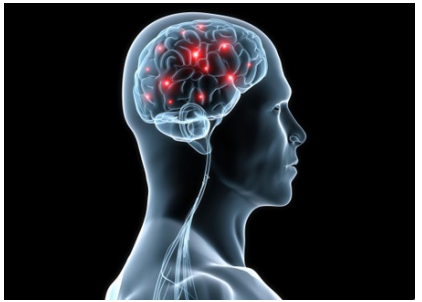
Significant unmet need for cognitive enhancement in schizophrenia

[1] Range – internal KOL review suggested over 30% of schizophrenics suffer cognitive impairment; 75% is figure quoted in Wall St analyst forecasts; [2] Bora & Murray 2014, 40(4):744-55; [3] Saedi et al 2006; Schizophrenia Research; 85:222-231; [4] Moore & O'Keefe, 1999, Drugs & Aging, 15(1):15-28; [5] Brujinzeel & Tandon, 2016, Drug Design, Development and Therapy 10:1641-1647

Cognitive Impairment in Bipolar Disorder (CIBD)

Overview of Clinical Rationale & Unmet Need

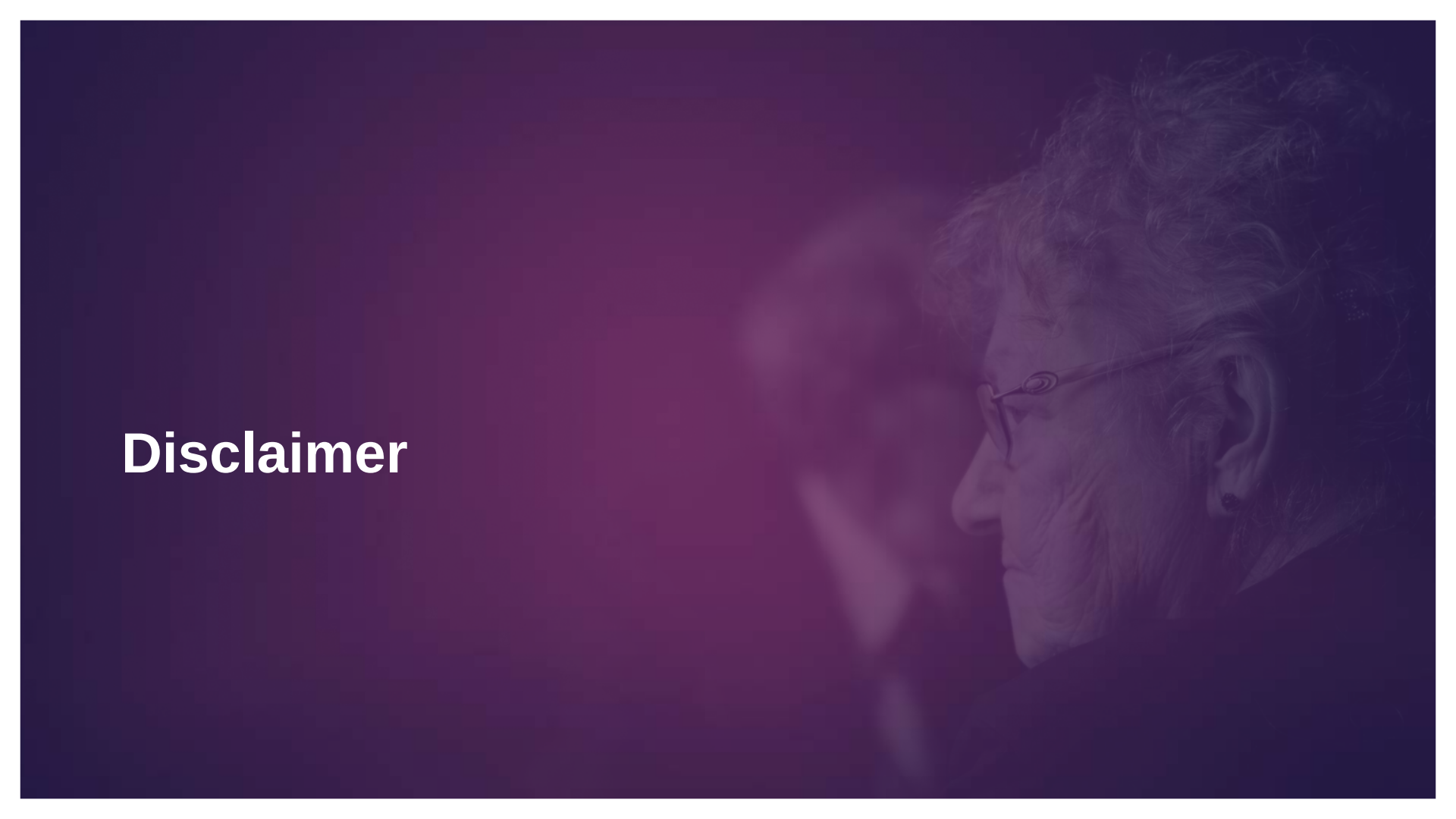
- General lack of understanding of the severity of CIBD
- Over half **(40-60%)** of patients with bipolar disorder have clinically significant cognitive impairment
- Impairment is present in manic, depressed, and euthymic phases of bipolar disorder
- Most affected domains: attention, verbal learning, memory, & executive functions
- CIBD may be less severe than CIAS, however improvements in CIBD will likely have clinical benefit in quality of life measures, especially activities that depend on intact cognition[1]



Significant unmet need for cognitive enhancement in bipolar disorder

[1] reviewed in Sole et al, 2017, Int J Neuropsychopharmacol 20(8):670-680

Disclaimer



Disclaimer

This presentation has been prepared by Actinogen Medical Limited. (“Actinogen” or the “Company”) based on information available to it as at the date of this presentation. The information in this presentation is provided in summary form and does not contain all information necessary to make an investment decision.

This presentation does not constitute an offer, invitation, solicitation or recommendation with respect to the purchase or sale of any security in Actinogen, nor does it constitute financial product advice or take into account any individual’s investment objectives, taxation situation, financial situation or needs. An investor must not act on the basis of any matter contained in this presentation but must make its own assessment of Actinogen and conduct its own investigations. Before making an investment decision, investors should consider the appropriateness of the information having regard to their own objectives, financial situation and needs, and seek legal, taxation and financial advice appropriate to their jurisdiction and circumstances. Actinogen is not licensed to provide financial product advice in respect of its securities or any other financial products. Cooling off rights do not apply to the acquisition of Actinogen securities.

Although reasonable care has been taken to ensure that the facts stated in this presentation are accurate and that the opinions expressed are fair and reasonable, no representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions and conclusions contained in this presentation. To the maximum extent permitted by law, none of Actinogen its officers, directors, employees and agents, nor any other person, accepts any responsibility and liability for the content of this presentation including, without limitation, any liability arising from fault or negligence, for any loss arising from the use of or reliance on any of the information contained in this presentation or otherwise arising in connection with it.

The information presented in this presentation is subject to change without notice and Actinogen does not have any responsibility or obligation to inform you of any matter arising or coming to their notice, after the date of this presentation, which may affect any matter referred to in this presentation.

The distribution of this presentation may be restricted by law and you should observe any such restrictions.

This presentation contains certain forward looking statements that are based on the Company’s management’s beliefs, assumptions and expectations and on information currently available to management. Such forward looking statements involve known and unknown risks, uncertainties, and other factors which may cause the actual results or performance of Actinogen to be materially different from the results or performance expressed or implied by such forward looking statements. Such forward looking statements are based on numerous assumptions regarding the Company’s present and future business strategies and the political and economic environment in which Actinogen will operate in the future, which are subject to change without notice. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward looking statements or other forecast. To the full extent permitted by law, Actinogen and its directors, officers, employees, advisers, agents and intermediaries disclaim any obligation or undertaking to release any updates or revisions to information to reflect any change in any of the information contained in this presentation (including, but not limited to, any assumptions or expectations set out in the presentation).