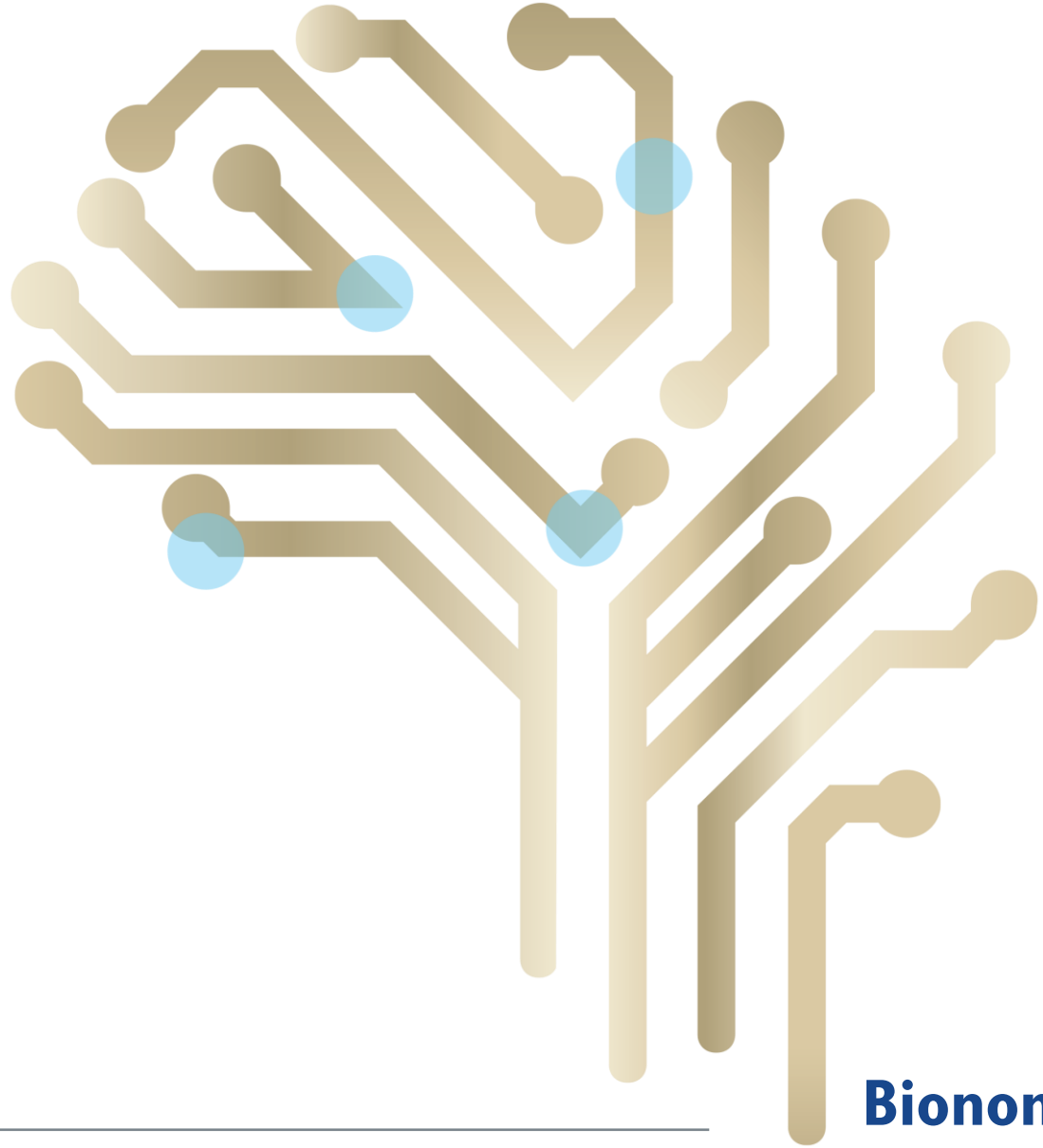
TO IMPROVE THE LIVES OF PATIENTS WITH SERIOUS **CNS DISORDERS**

Corporate Presentation

ASX: BNO
Nasdaq: BNOX

April 2022



Bionomics

SAFE HARBOR STATEMENT

Factors Affecting Future Performance

This presentation may contain "forward-looking" statements within the meaning of the United States' Private Securities Litigation Reform Act of 1995. Any statements contained in this presentation that relate to prospective events or developments, including, without limitation, statements made regarding Bionomics' drug candidates (including BNC210, BNC105, BNC101 and BNC375), its licensing agreement with Merck & Co. and any milestone or royalty payments thereunder, drug discovery programs, ongoing and future clinical trials, and timing of the receipt of clinical data for our drug candidates are deemed to be forward-looking statements. Words such as "believes," "anticipates," "plans," "expects," "projects," "forecasts," "will" and similar expressions are intended to identify forward-looking statements.

There are a number of important factors that could cause actual results or events to differ materially from those indicated by these forward-looking statements, including unexpected safety or efficacy data, unexpected side effects observed in clinical trials, risks related to our available funds or existing arrangements, delays or difficulties associated with conducting clinical trials, our failure to introduce new drug candidates or platform technologies or obtain regulatory approvals in a timely manner or at all, regulatory changes, inability to protect our intellectual property, risks related to our international operations, as well as other factors. Results of studies performed on our drug candidates and competitors' drugs and drug candidates may vary from those reported when tested in different settings. The inclusion of forward-looking statements should not be regarded as a representation by Bionomics that any of its expectations, projections or plans will be achieved. Actual results may differ from those expectations, projections or plans due to the risks and uncertainties inherent in Bionomics business and other risks described in Bionomics' filings with the SEC. New risk factors emerge from time to time and it is not possible for our management to predict all risk factors, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in, or implied by, any forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. Except as required by law, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this presentation.

Subject to the requirements of any applicable legislation or the listing rules of any stock exchange on which our securities are quoted, we disclaim any intention or obligation to update any forward-looking statements as a result of developments occurring after the date of this presentation.

Certain information contained in this presentation relates to, or is based on, studies, publications, surveys and other data obtained from third party sources and Bionomics' own internal estimates and research. While we believe these third party sources to be reliable as of the date of this presentation, we have not independently verified, and make no representation as to the adequacy, fairness, accuracy or completeness of, any information obtained from third party sources. In addition, all of the market data included in this presentation involves a number of assumptions and limitations, and there can be no guarantee as to the accuracy or reliability of such assumptions. Finally, while we believe our own internal research is reliable, such research has not been verified by any independent source.

Bionomics

- Diversified, clinical-stage biopharmaceutical company developing novel, allosteric ion channel modulators designed to transform the lives of patients suffering from serious Central Nervous System (CNS) disorders
- BNC210 in Phase 2 for acute treatment in Social Anxiety Disorder (SAD) – Established clinical PoC in GAD[1] and Fast Track designation from FDA for SAD
- BNC210 in ongoing Phase 2b ATTUNE trial with Fast Track designation from FDA for PTSD
- Large underserved markets with over 22 million patients in the United States alone suffering from SAD and PTSD and no new FDA approved therapies in nearly two decades
- Strategic partnership with Merck & Co. for cognitive impairment in Alzheimer's disease and other CNS conditions
- Pipeline of partnering candidates targeting potassium (Kv) and sodium (Nav) ion channels
- Well-capitalized balance sheet with multiple potential near term value-driving milestones

PoC = Proof of Concept
GAD = Generalized Anxiety Disorder
PTSD = Post-Traumatic Stress Disorder

1. *Wise et al 2020, Biological Psychiatry; Perkins et al 2021, Molecular Psychiatry*

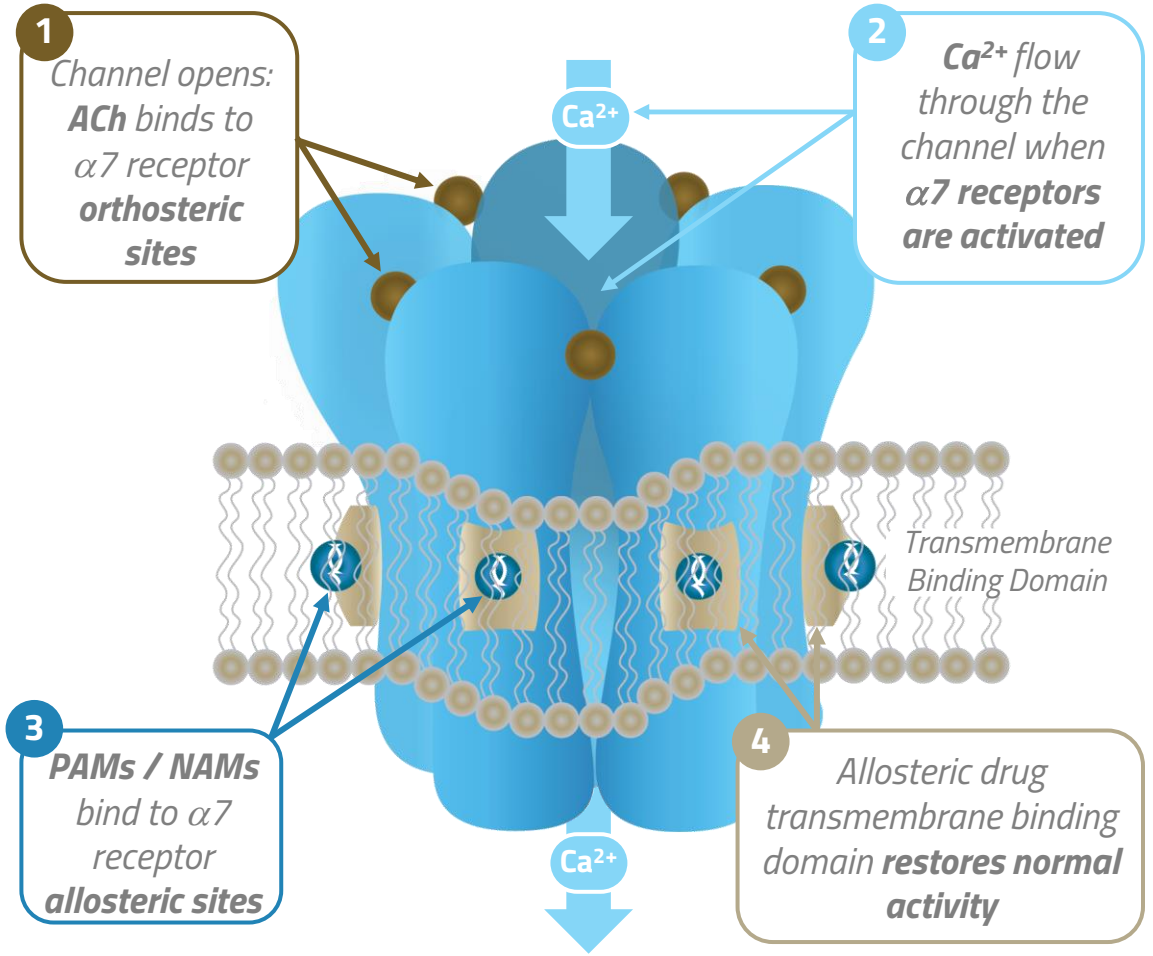
Focused CNS Pipeline with Multiple Potential Catalysts on the Horizon

PROGRAM	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	EXPECTED TIMING
BNC210 α7 receptor NAM EmpathBio	**Social Anxiety Disorder (SAD)** 150 patients across 15-20 centers in US		PREVAIL Study *Fast Track Designation*		*Study underway* *Topline Data: YE'22*
	Post-Traumatic Stress Disorder (PTSD) 200 patients across ~25 centers in US		ATTUNE Study *Fast Track Designation*		*Study underway* *Topline Data: 1H'23*
	+MDMA derivative EMP-01 (PTSD)	*Memorandum of Understanding to explore combination treatment regimen for PTSD*			*Ongoing*
MERCK *COLLABORATION* α7 receptor PAM	**2 candidates for cognitive deficits in Alzheimer's disease**				*Phase 1 safety & biomarker studies ongoing*
PAIN Nav1.7/1.8 Inhibitors	**Candidate**				*Ongoing*
COGNITION Kv3.1/3.2 Activators	**Series Lead**				

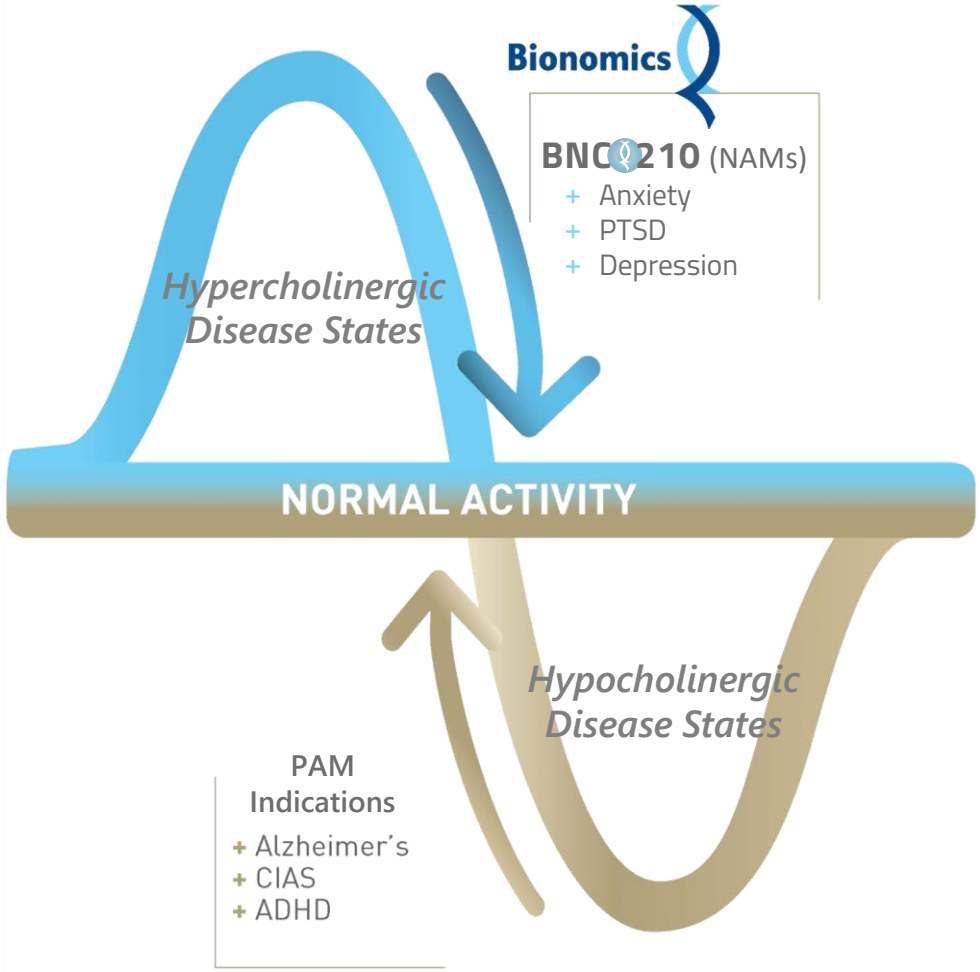
NAM = Negative Allosteric Modulator
PAM = Positive Allosteric Modulator

A Differentiated Approach: The α7 Nicotinic Acetylcholine Receptor

Normalizing Effect Utilizing ***Allosteric Modulation***



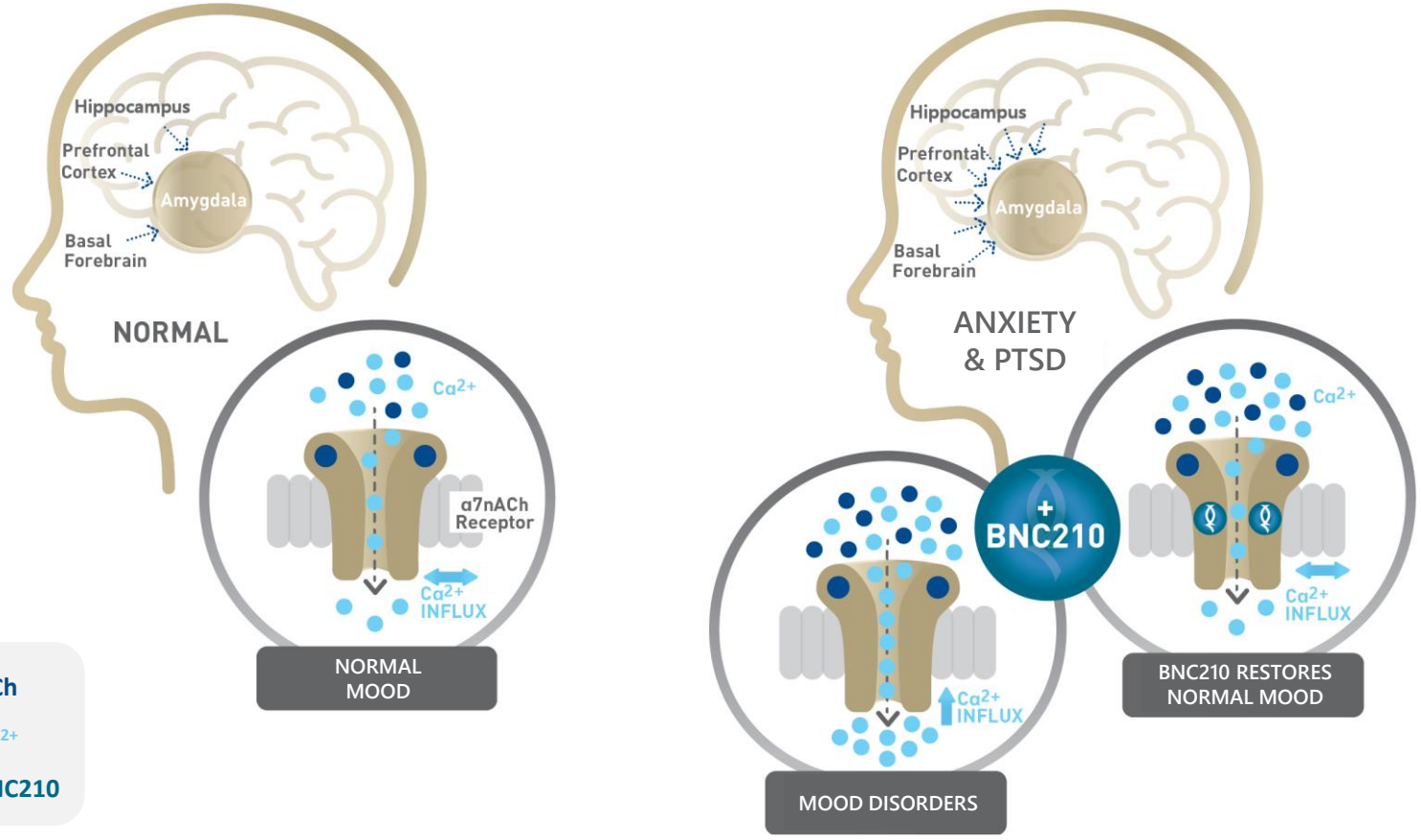
Targeting ***Distinct CNS Conditions*** with ***Neurotransmitter Imbalance***



Bionomics

Ca^{2+} = Calcium ions
ACh = Acetylcholine
NAM = Negative Allosteric Modulator
PAM = Positive Allosteric Modulator
Cholinergic = System associated with memory, selective attention, and emotional processing cognitive functions
PTSD = Post-Traumatic Stress Disorder
CIAS = Cognitive Impairment Associated with Schizophrenia
ADHD = Attention Deficit Hyperactivity Disorder

*Action of **BNC210** **depends on** **Acetylcholine** **neurotransmission** and **Allosteric** **Modulation of** **α7 nAChR***



*NAMs have **self-limiting activity** determined by the **cooperative interaction** between BNC210 and Acetylcholine **binding at the allosteric and orthosteric sites**, respectively*

nAChR = Nicotinic Acetylcholine Receptor
NAM = Negative Allosteric Modulator
Ca^{2+} = Calcium ions
ACh = Acetylcholine

BNC210 in Social Anxiety Disorder

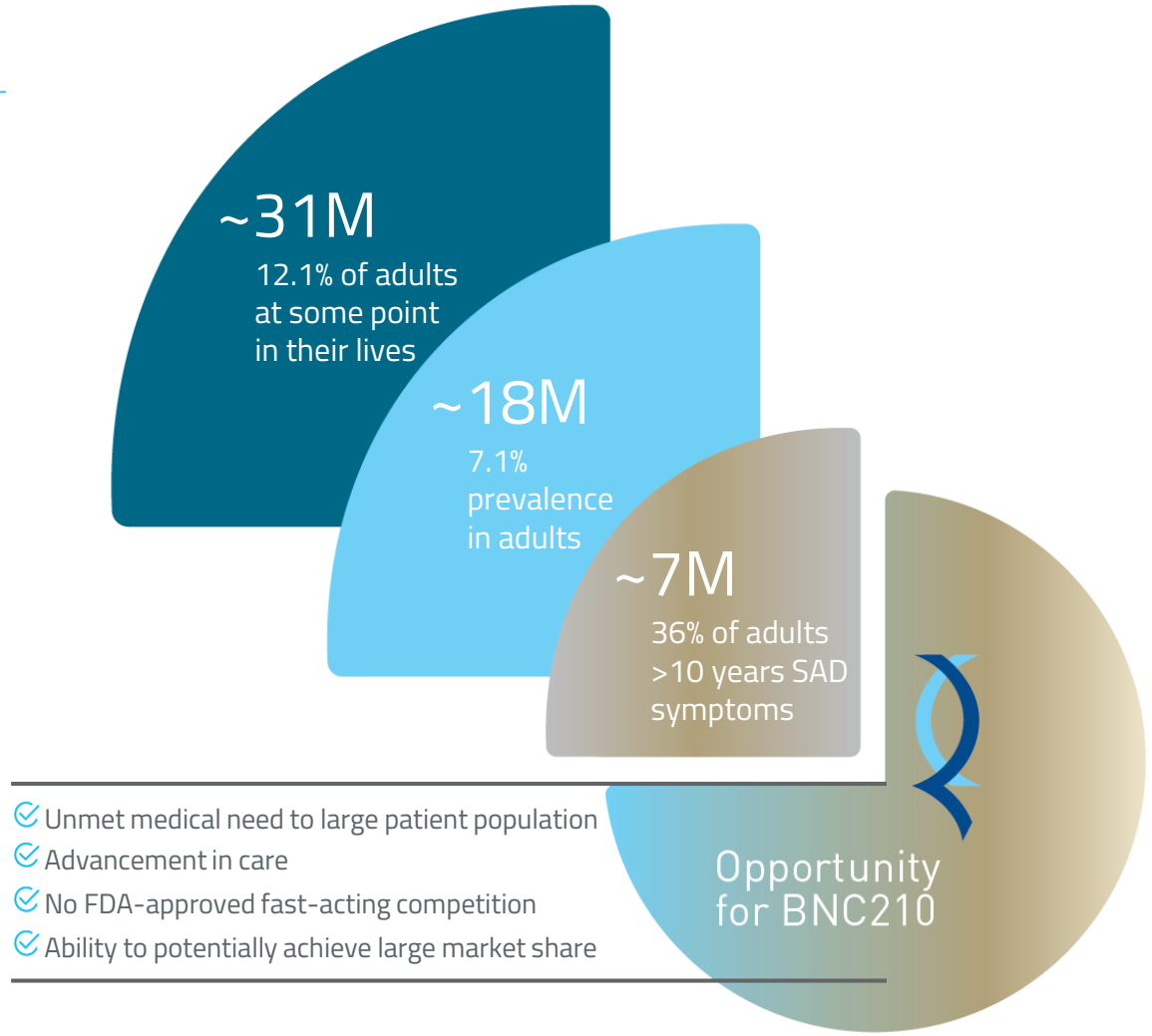
Acute Anxiety in SAD Represents a Significant Unmet Need

Social Anxiety Disorder (SAD), or Social Phobia, is a significant and persistent fear of social and performance-related situations

Includes anxiety from everyday social situations as well as "Fear of Public Speaking"

A disorder that substantially impacts many people's daily lives

- Amongst the largest mental health conditions with lifetime prevalence affecting >31M Americans
- No FDA-approved fast-acting medications for as-needed treatment
- Medications with the right pharmacokinetic profile and a novel mechanism are needed

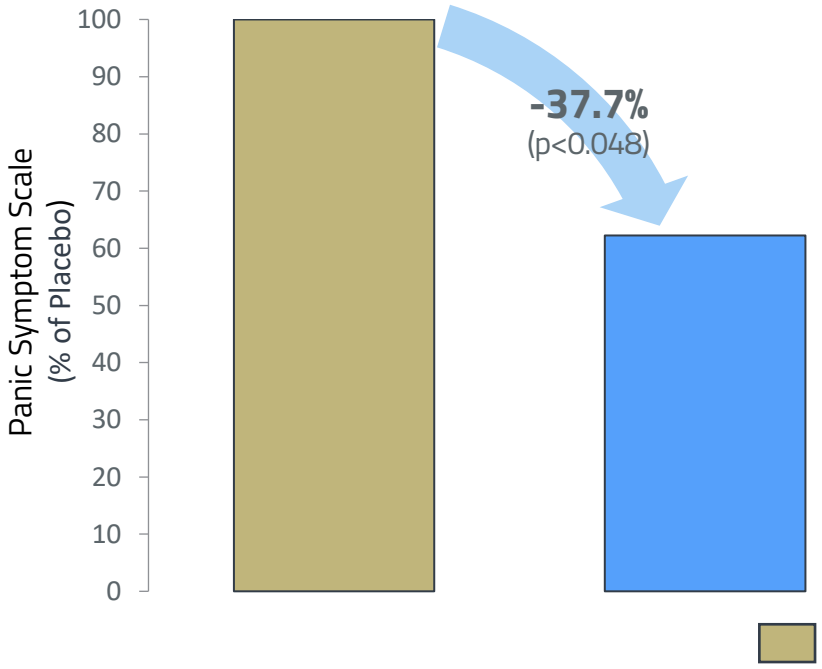


Sources:
US Census Bureau. https://www.census.gov/library/stories/2021/08/united-states-adult-population-grew-faster-than-nations-total-population-from-2010-to-2020.html
NIMH. 'Social Anxiety Disorder' data from 2017 National Comorbidity Survey (NCS). https://www.nimh.nih.gov/health/statistics/social-anxiety-disorder.shtml
Anxiety and Depression Association of America (ADAA). 'Social Anxiety Disorder - Understand the Facts' https://adaa.org/understanding-anxiety/social-anxiety-disorder

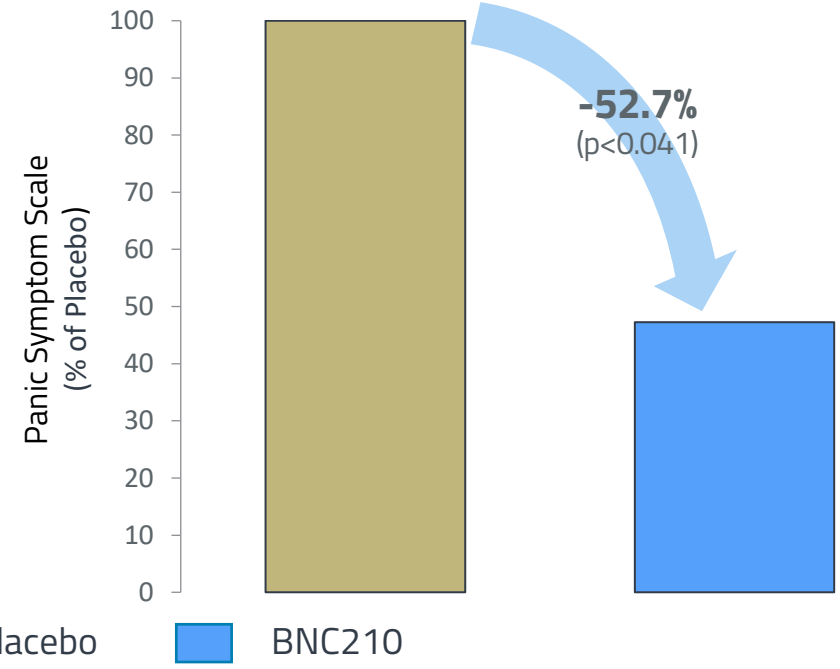
BNC210 Significantly Reduced Panic Symptoms in Humans: CCK-4-Induced Model

*Placebo-controlled study in **15 healthy volunteers** who experienced a **CCK-4-induced panic attack***

Total # of Panic Symptoms



Panic Symptom Intensity

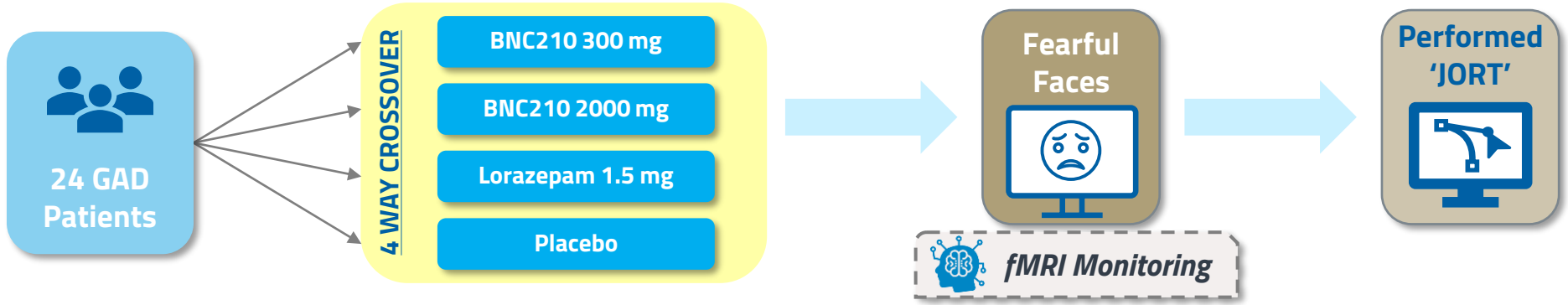


Placebo BNC210

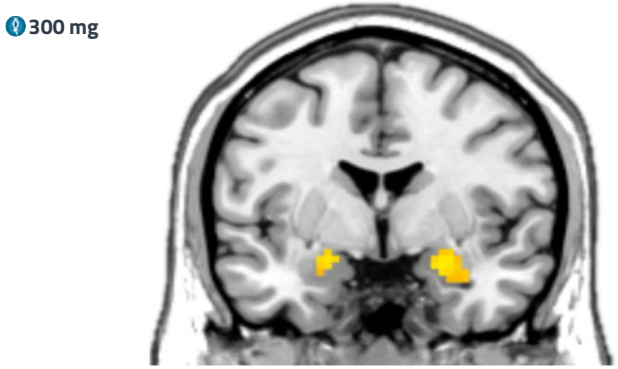
BNC210 demonstrated ***reduction in panic symptoms and intensity*** as measured with the Panic Symptom Scale

CCK-4 = Cholecystokinin Tetrapeptide (a peptide that induces anxiety and panic symptoms)

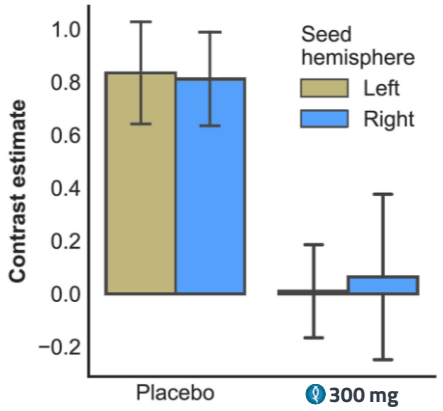
BNC210 Demonstrated Acute Anxiolytic Activity in GAD Phase 2



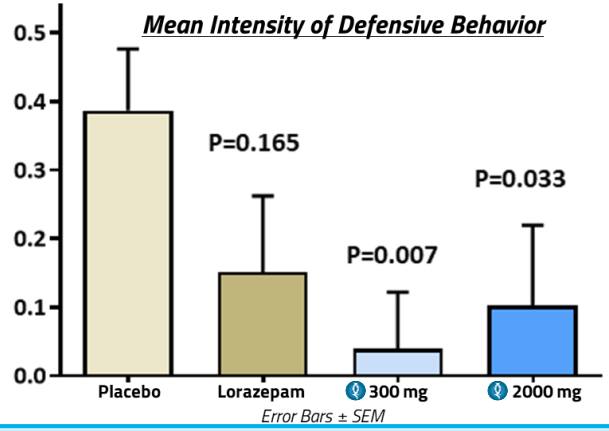
Significantly reduced activation of L & R amygdala caused by viewing fearful faces (L: p<0.05; R: p<0.01)



Significantly reduced connectivity between amygdala and ACC while viewing fearful faces (p<0.05)



Significantly reduced threat avoidance behavior of anxious subjects in the JORT behavioral task



- ***Amygdala activation*** *is an imaging* ***surrogate for anxiety***
- *Connectivity between the* ***amygdala*** and ***Anterior Cingulate Cortex (ACC)*** *is* ***very strong in high anxiety***

Bionomics

= BNC210

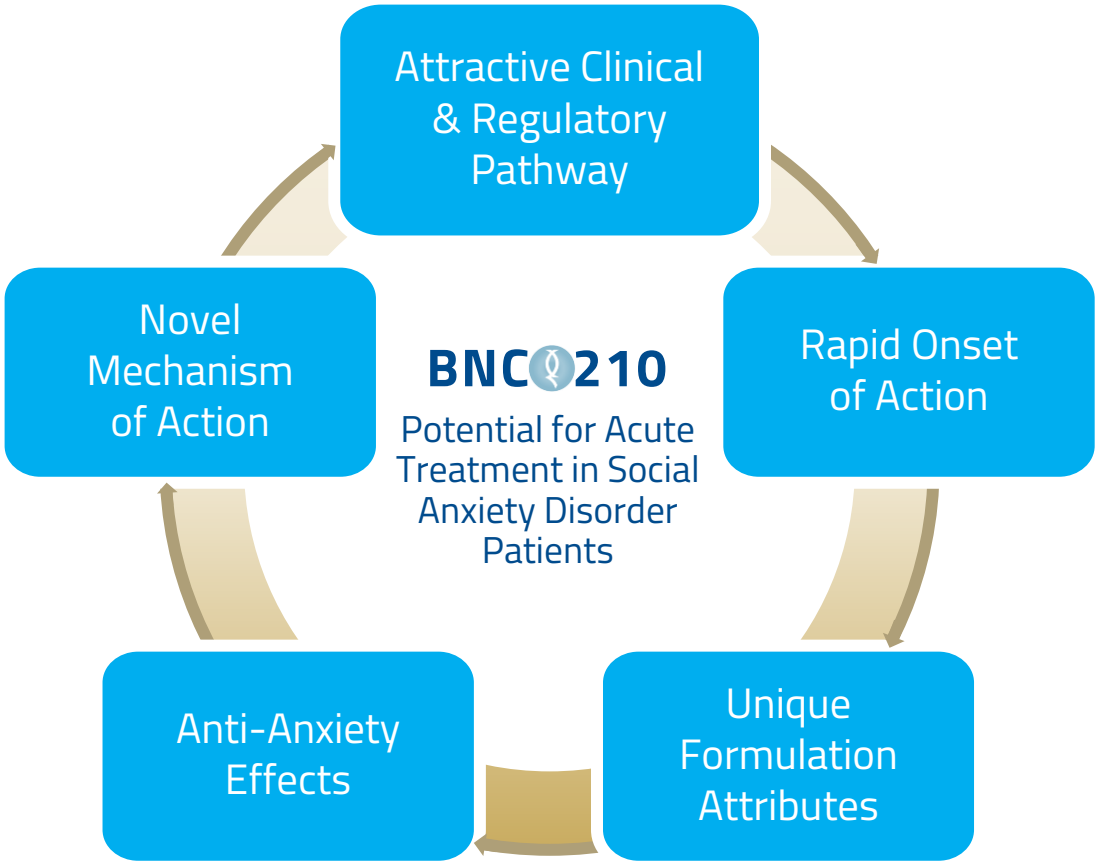
Wise T. et al., Biological Psychiatry 2020 (https://doi.org/10.1016/j.biopsych.2019.12.013); Perkins A. et al., Translational Psychiatry 2021 (https://doi.org/10.1038/s41398-020-01141-5)

GAD = Generalized Anxiety Disorder

JORT = Joystick Operated Runway Task

fMRI = Functional Magnetic Resonance Imaging

BNC210 Addresses the Shortcomings of Existing Social Anxiety Disorder Approaches



CURRENT TREATMENTS FOR SOCIAL ANXIETY DISORDER

DRUG	FAST ACTING	NO SEDATION	NO WITHDRAWAL SYNDROME	NO MEMORY IMPAIRMENT	NO MOTOR IMPAIRMENT
Benzodiazepines[1]	✓	X	X	X	X
SSRIs / SNRIs[2]	X	✓	X	✓	✓

BNC210 IS DESIGNED TO PROVIDE ADVANTAGES COMPARED TO CURRENT THERAPIES*

DRUG	FAST ACTING	NO SEDATION	NO WITHDRAWAL SYNDROME	NO MEMORY IMPAIRMENT	NO MOTOR IMPAIRMENT
BNC210	✓	✓	✓	✓	✓

** Potential benefits based on analysis of data from separate studies and not on results that might have been obtained from head-to-head studies. Such data may not be directly comparable due to differences in study protocols, conditions and patient populations. Accordingly, cross-trial comparisons may not be reliable predictors of the relative efficacy or other benefits of BNC210 compared to existing therapies or other product candidates that may be approved or are in development for the treatment of PTSD or SAD.*

1. *Includes Valium and certain other benzodiazepines*
2. *Includes Prozac and certain other SSRIs (Selective Serotonin Reuptake Inhibitors) / SNRIs (Serotonin-Norepinephrine Reuptake Inhibitors)*

BNC210's Rapid Onset of Action is Well-Positioned for Social Anxiety Disorder

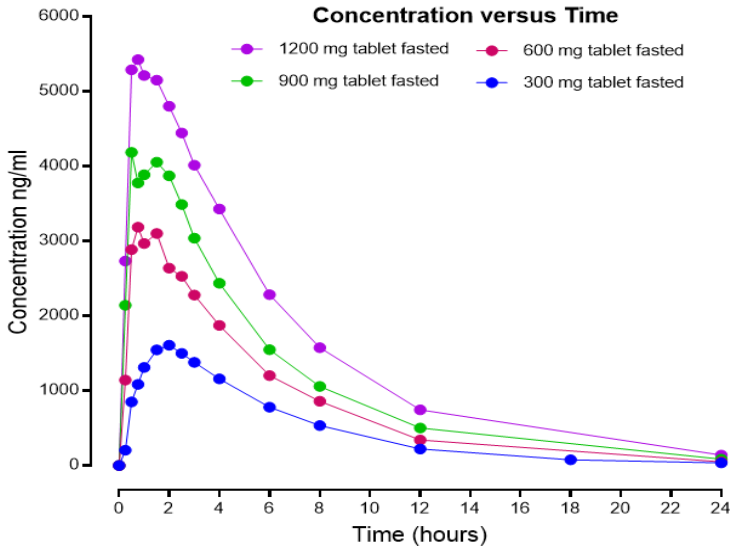
✓ Emerging Regulatory Landscape & Unmet Need

- Benzodiazepines prescribed off-label have significant side effects of sedation, cognitive impairment and potential for addiction
- Growing unmet need based on improving awareness and evolving regulatory dynamics
- FDA precedent on simplified public speaking challenge endpoint for acute anxiety reduction *vs.* placebo*

✓ Rapid Onset of Action with BNC210 Formulation

- Clinically demonstrated potential for reducing anxiety in acute treatment of GAD patients and following panic induction
- Observed acute anxiolytic efficacy of BNC210 similar to lorazepam without sedative properties and addiction liability
- Formulation well-suited for acute dosing – Rapidly absorbed to high concentrations within a short period of time

Maximum concentrations reached in ~45 – 105 min. across the dose range

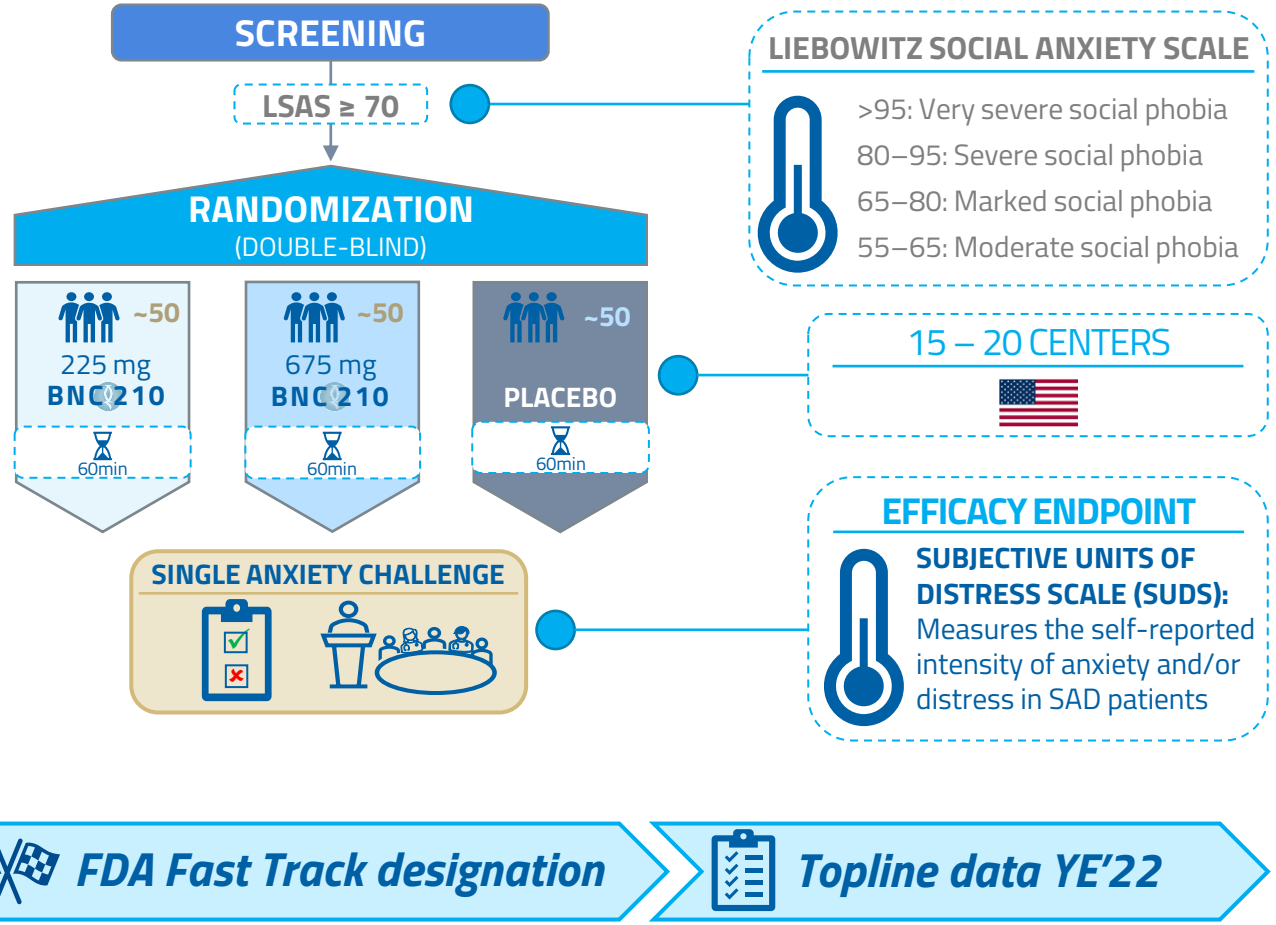


*Based on path of CNS peer proceeding with registrational Phase 3 endpoint

Acute Social Anxiety Disorder Study Highlights

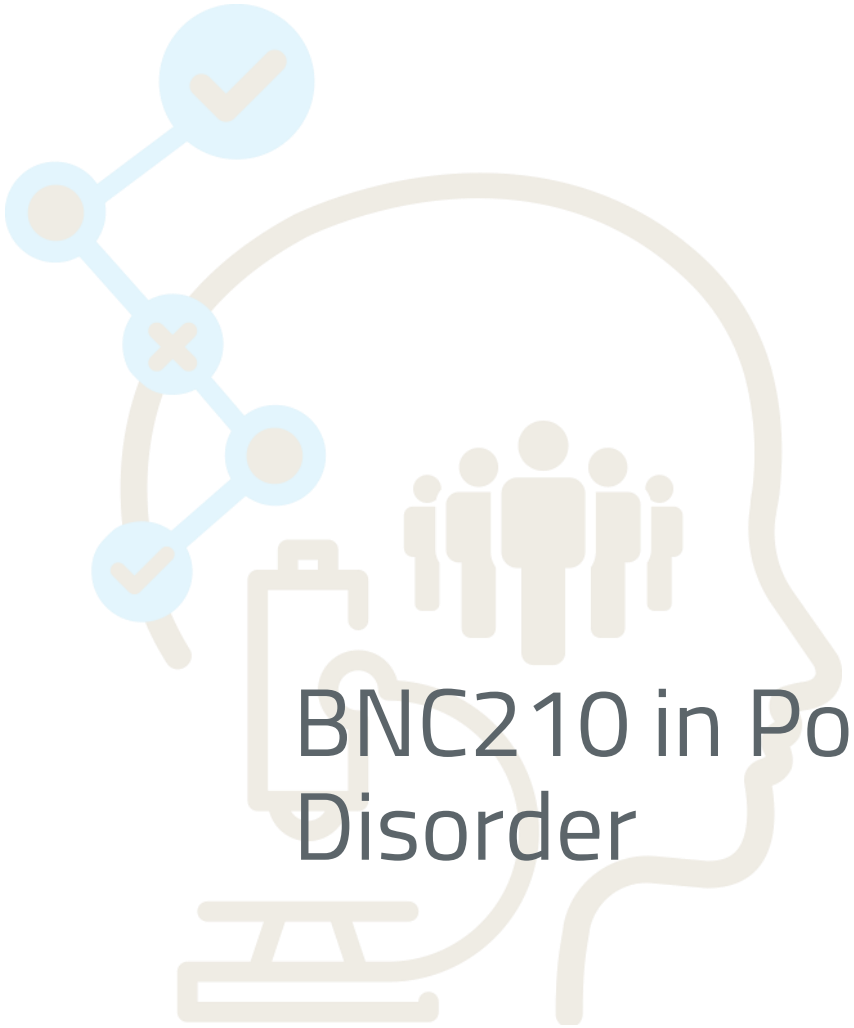
- ✓ Cost-effective trial with an efficacy endpoint conducive to rapid data generation
- ✓ Ability to leverage VistaGen's development plan and trial design for Social Anxiety Disorder
- ✓ Received FDA clearance for IND filing and ***FDA Fast Track designation***
- ✓ Phase 2 trial underway and will read out topline data by end of 2022

Phase 2 PREVAIL Study Design



FDA Fast Track designation → ***Topline data YE'22***

LSAS = Liebowitz Social Anxiety Scale

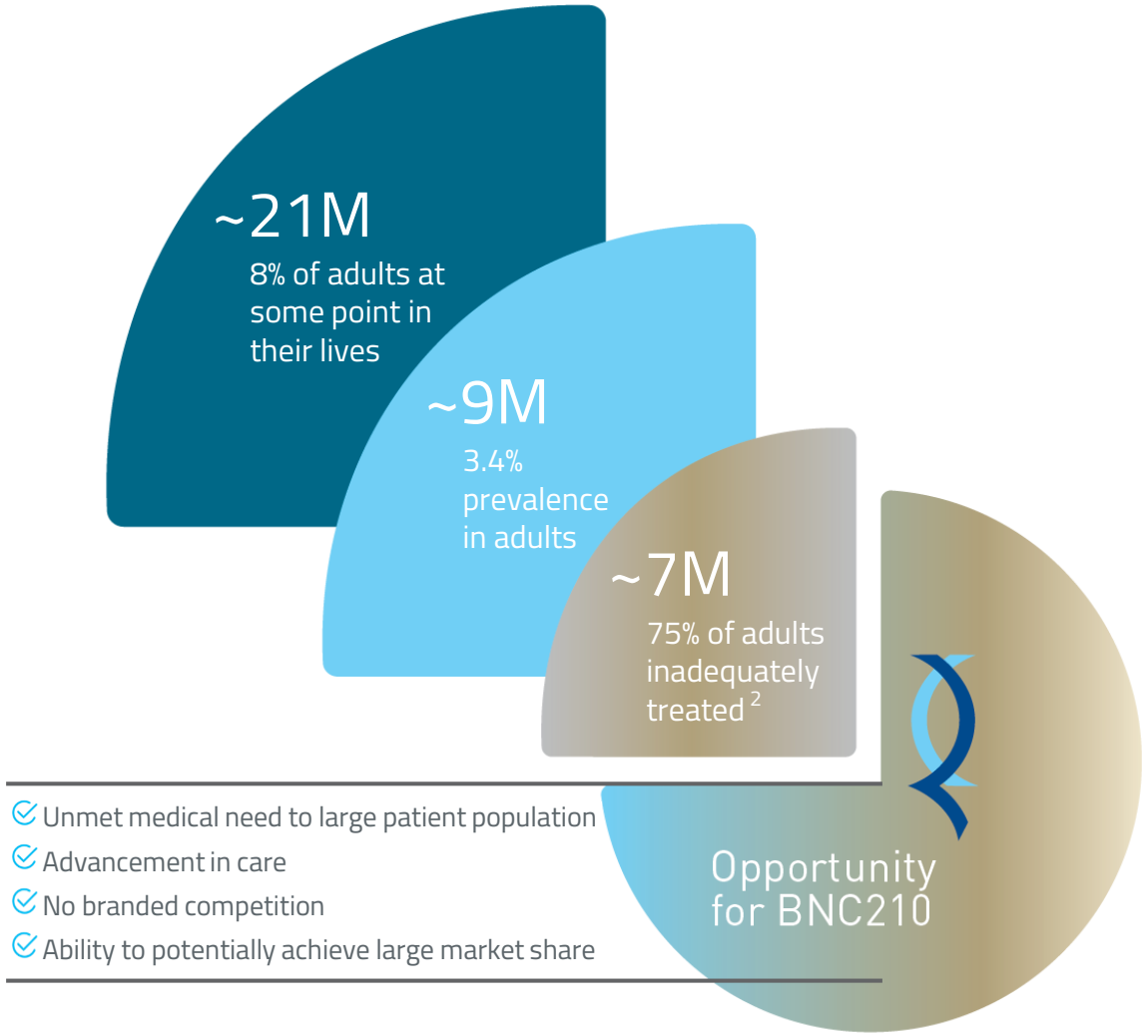


BNC210 in Post-Traumatic Stress Disorder

Tackling the Profound Disease Burden of Post-Traumatic Stress Disorder

PTSD Represents a Significant Unmet Need

- ✓ 70% of people will experience a traumatic event in their lifetime, but most people recover normally
- ✓ PTSD results from exposure to actual or threatened death, serious injury or sexual violence
- ✓ Affects up to 8% of adults during their lifetime[1]
- ✓ PTSD is a global mental health problem that is associated with significant morbidity and mortality and shows up in all facets of peoples' lives
- ✓ No newly approved pharmacotherapy in almost two decades
- ✓ ***Medications with a novel mechanism of action that can address the pathophysiology of PTSD are needed***



Bionomics

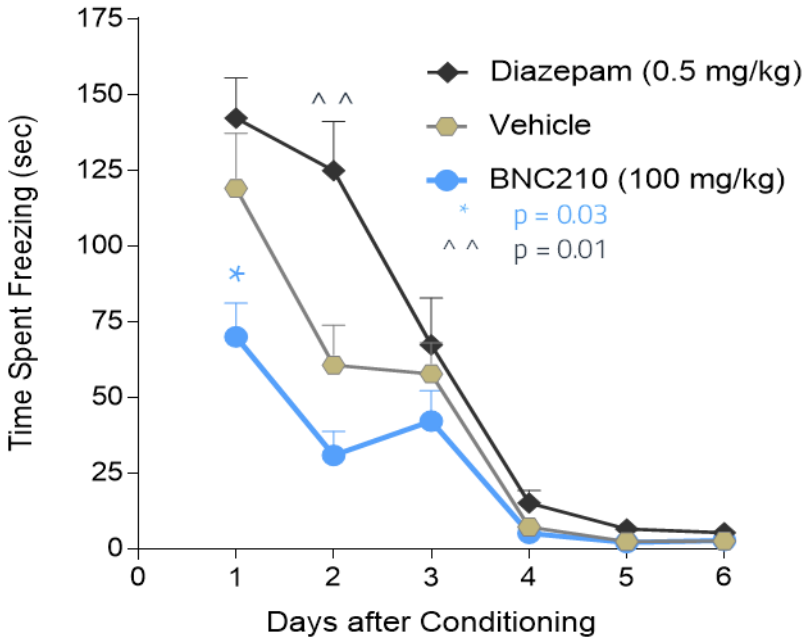
1. *Kilpatrick, D., Resnick, H., Milanak, M., Miller, M., Keyes, K. and Friedman, M., 2013. National Estimates of Exposure to Traumatic Events and PTSD Prevalence Using DSM-IV and DSM-5 Criteria. Journal of Traumatic Stress, 26(5), pp.537–547; 2 Mayo LM, Asratain A., Lindé J et al. Elevated Anandamide, Enhanced Recall of Fear Extinction, and Attenuated Stress Responses Following Inhibition of Fatty Acid Amide Hydrolase: A Randomized, Controlled Experimental Medicine Trial. Biol Psychiatry. 2020 Mar 15; 87(6): 538-54*
2. *Only 20 to 30% of PTSD patients achieve clinical remission on SSRI therapies.*

US Census Bureau. https://www.census.gov/library/stories/2021/08/united-states-adult-population-grew-faster-than-nations-total-population-from-2010-to-2020.html

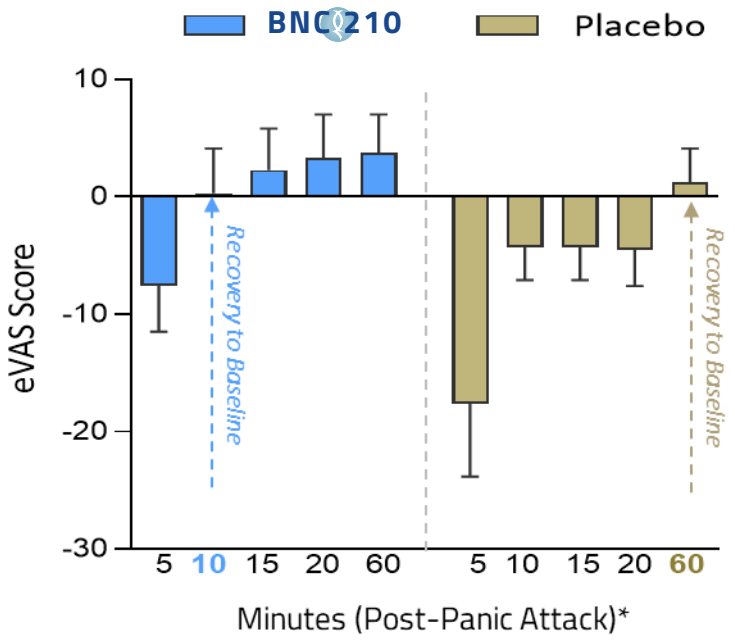
BNC210 Anti-Anxiety Signals Observed in Animal Models and Human Translational Studies

People with ***anxiety disorders and PTSD*** have ***amplified fear responses*** to trauma- or stress-related stimuli and ***impaired fear extinction***

Conditioned Fear Extinction Model



Emotional Visual Analog Scale (eVAS)



BNC210 ***enhanced fear extinction*** following conditioned response training

BNC210 ***enhanced emotional recovery*** following a CCK-induced panic attack

Bionomics

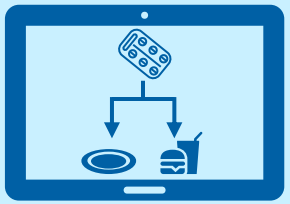
**Time in minutes after CCK-4 injection*
CCK-4 = Cholecystokinin Tetrapeptide (a peptide that induces anxiety and panic symptoms)
eVAS = Emotional Visual Analog Scale

BNC210 is Well-Positioned in Post-Traumatic Stress Disorder

- ✓ *Anti-depressant and anti-anxiety trends seen at earlier time points*
- ✓ *Safety profile generally well tolerated*

Did not meet primary endpoint*; lower than expected exposure of liquid suspension formulation

- ✓ *Pharmacometric analysis of Phase 2 PTSD data*
- ✓ *Predicted significant efficacy potential with adequate drug exposure achieved*



- ✓ *New tablet formulation overcomes food effect of suspension formulation*
- ✓ *Achieved exposure target predicted from pharmacometric analysis*
- ✓ *Extended IP coverage*

- ✓ *Type C meeting with FDA*
- ✓ *FDA granted Fast Track designation in PTSD*

- ✓ *Phase 2b ATTUNE trial started in July 2021*
- ✓ *Topline data expected 1H 2023*

*Primary endpoint of CAPS-5 total symptom severity score at 12 weeks

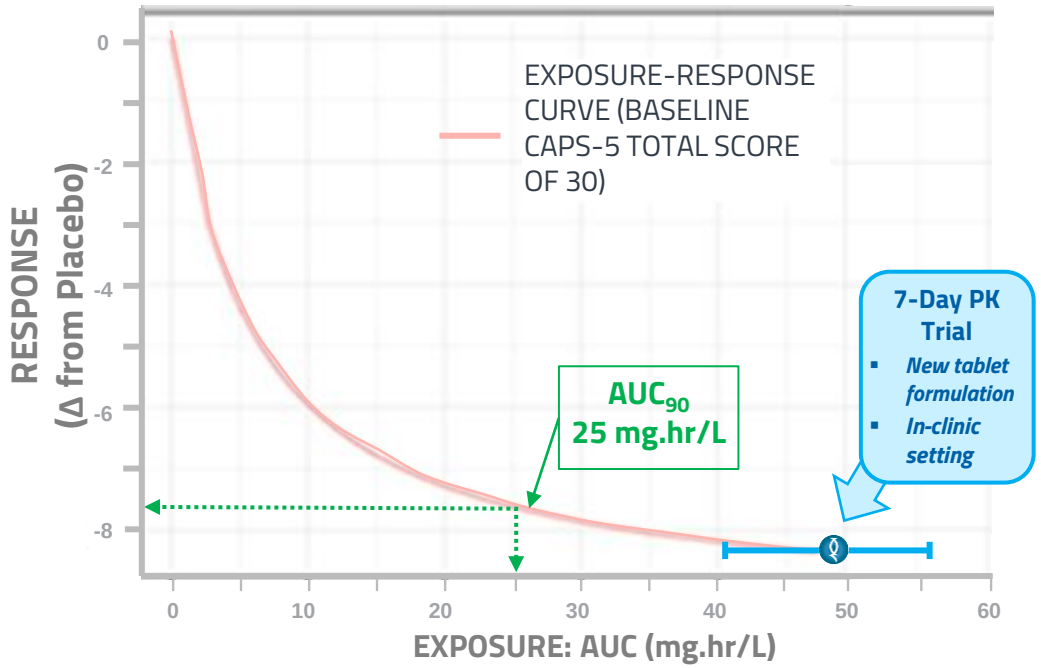
Pharmacometric Modeling Target Achieved with New Dose Solid Formulation

PMX modelling on prior Phase 2 PTSD trial identified liquid suspension under-exposure

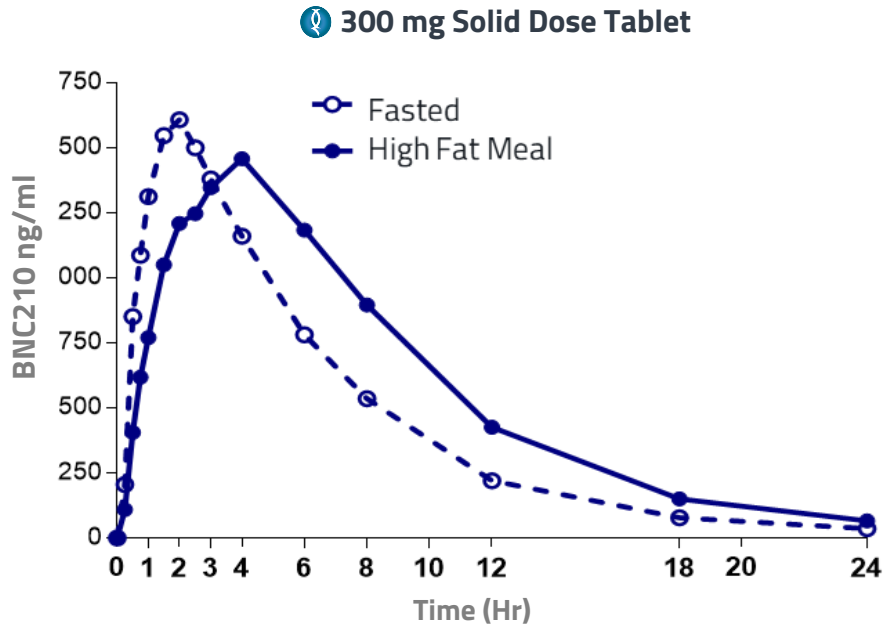
BNC210 tablet formulation

New formulation achieves target AUC >25 mg.hr/L with 900 mg dose b.i.d.

Pharmacometric (PMX) Analysis Target Exposure



BNC210 Novel Spray Dry Dispersion Formulation



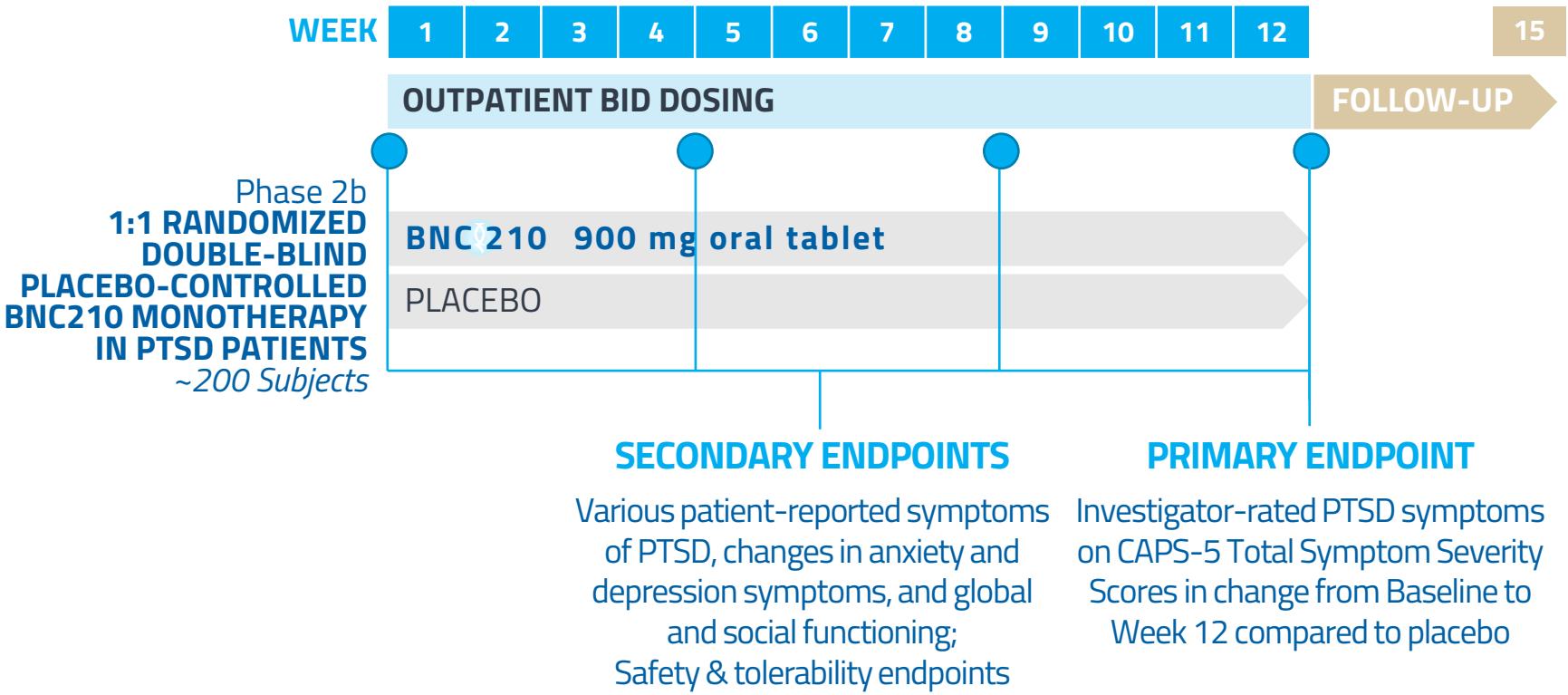
AUC Values (plasma exposure) = ***CAPS-5 Score (PTSD symptoms)***

Novel tablet ***overcomes food effect*** and has ***dose linear exposure***

7-Day Pharmacokinetic study of BNC210 tablet formulation mean AUC (mg.hr/L) ± standard deviation

PMX = Population pharmacometric modelling
b.i.d = Administered twice daily

BNC210 Phase 2b PTSD ATTUNE Study Underway



PHASE 2b

Single potential registrational-supporting trial for monotherapy treatment in PTSD

KEY INCLUSION CRITERIA

Female and male (18 – 75 years)
Current PTSD diagnosis
CAPS-5 ≥ 30 (Screening & Baseline)
(& ≤ 25% decrease Screening to Baseline)

~25 Sites

Fast Track designation from FDA

Topline data expected 1H'23

BID = Twice daily dosing
CAPS-5 = Clinician-Administered PTSD Scale for the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5)

CNS-focused Collaborations

Ongoing Strategic Collaboration with Merck & Co.

MSD Collaboration Overview

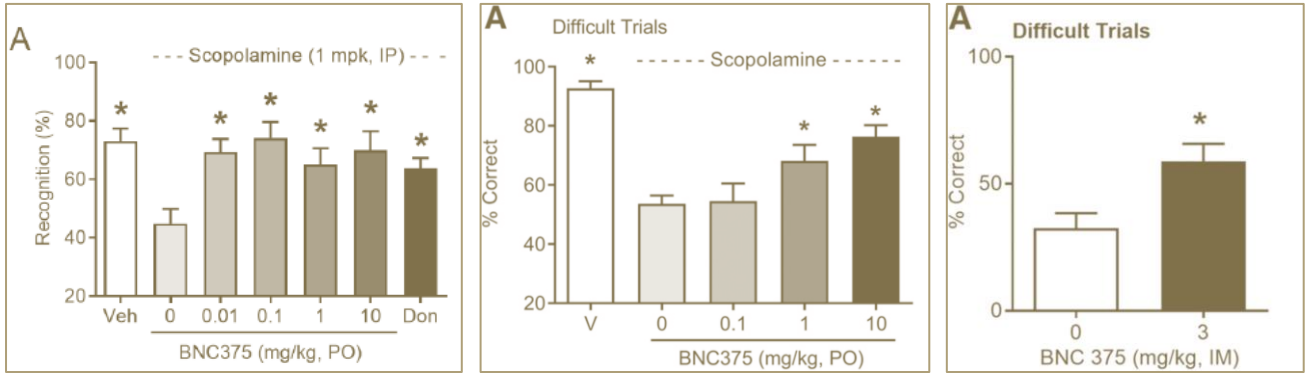
- Entered into in 2014 to develop α7 receptor PAMs targeting cognitive dysfunction associated with Alzheimer's disease and other central nervous system conditions
- Merck funds all R&D activities including clinical development and WW commercialization of any products from collaboration
- Milestone payments of ***US$20M upfront*** and ***US$10M in 2017*** when 1st compound entered Phase 1 clinical trials
- Eligible to receive ***up to US$465M in additional development and commercial milestone payments plus royalties***

Development Updates

- Includes 2 candidates which are PAMs of the α7 receptor in early-stage Phase 1 safety and biomarker clinical trials for treating cognitive impairment
- *The 1st compound has completed Phase 1 safety clinical trials in healthy subjects and there are ongoing plans for further biomarker studies*
- *In 2020, a second molecule that showed an improved potency profile in preclinical animal models was advanced by Merck into Phase 1 clinical trials*

MERCK PARTNERSHIP

Snapshot of Early BNC375 Studies



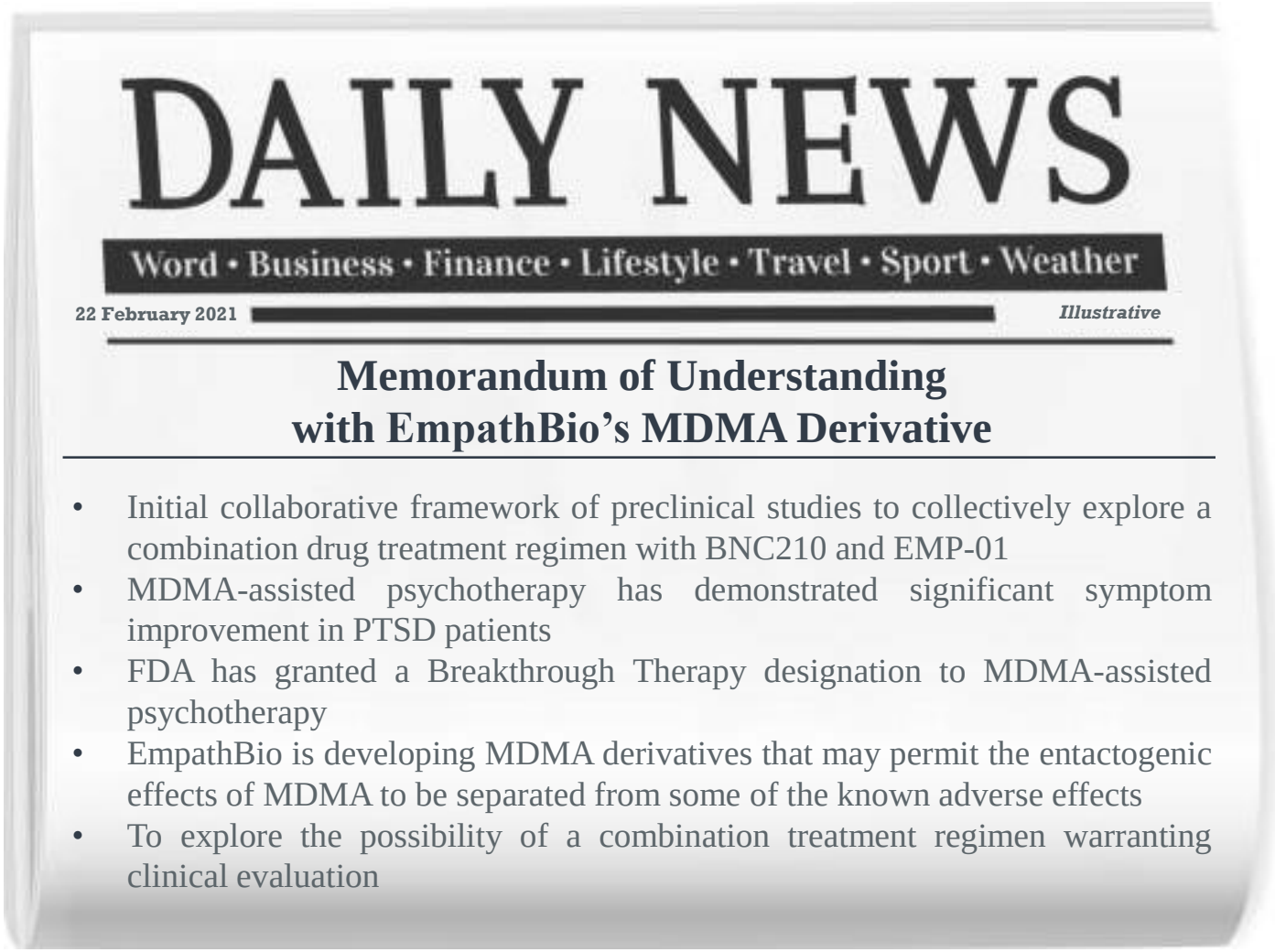
Wang et al. J Pharmacol Exp Ther 373:311–324, May 2020 https://pubmed.ncbi.nlm.nih.gov/32094294/
PAM = Positive allosteric modulator
MSD = A tradename of Merck & Co., Inc., Kenilworth NJ USA

Joint Feasibility Assessment with:

EmpathBio

ATAI LIFE SCIENCES

***EMP-01** = 3,4-Methylenedioxymethamphetamine (MDMA) derivative*


DAILY NEWS

Word • Business • Finance • Lifestyle • Travel • Sport • Weather

22 February 2021 *Illustrative*

Memorandum of Understanding with EmpathBio's MDMA Derivative

- Initial collaborative framework of preclinical studies to collectively explore a combination drug treatment regimen with BNC210 and EMP-01
- MDMA-assisted psychotherapy has demonstrated significant symptom improvement in PTSD patients
- FDA has granted a Breakthrough Therapy designation to MDMA-assisted psychotherapy
- EmpathBio is developing MDMA derivatives that may permit the entactogenic effects of MDMA to be separated from some of the known adverse effects
- To explore the possibility of a combination treatment regimen warranting clinical evaluation

Investment Highlights &
Stock and Financial Information

- ✓ Listing on two global exchanges
- ✓ Lean operations with modest burn
- ✓ Well-capitalized through CY2023
- ✓ A$40.4M (US$29.2M) of net cash

- Leading Significant Investors:

APEIRON INVESTMENT GROUP

BVF PARTNERS L.P.

PRESIGHT CAPITAL

MERCK

Figures as of December 31, 2021.
US dollar figures illustrative- Based on exchange rate of 1.38 as published by the Reserve Bank of Australia as of Dec. 31, 2021.

Bionomics Outlook: Renewed Value-driving Trajectory

Bionomics

- Diversified model with multiple value-driving clinical milestones expected in the next 4 – 6 quarters
- BNC210's novel rapid onset formulation granted Fast Track designation for acute treatment of SAD
  - Established clinical proof-of-concept[1]; expect Phase 2 topline data by YE'22
- BNC210 Phase 2b ATTUNE PTSD study under way with Fast Track designation for 1H'23 topline data
  - Tablet formulation achieves exposure projected from pharmacometric analysis
- Merck strategic partnership for treatment of cognitive impairment in Alzheimer's disease with two compounds in clinical development
- Diverse early-stage pipeline of partnering prospects targeting Kv and Nav ion channels for treatment of schizophrenia and pain, respectively
- Well-capitalized balance sheet driven by experienced leadership

SAD = Social Anxiety Disorder
PTSD = Post-Traumatic Stress Disorder

1. *Wise T. et al., Biological Psychiatry 2020 (https://doi.org/10.1016/j.biopsych.2019.12.013); Perkins A. et al., Translational Psychiatry 2021 (https://doi.org/10.1038/s41398-020-01141-5)*

APPENDIX:
Management Team & Board of Directors

Powered by a Seasoned and Experienced Management Team

Errol De Souza, PhD
Executive Chairman

Connor Bernstein
VP Strategy, Corporate Development & IR

Liz Doolin
VP Clinical Development

Adrian Hinton
Interim Chief Financial Officer

Archemix · Catalyst Biosciences · DuPont · Neurocrine Biosciences · Piper Sandler · Royalty Pharma · Aventis · cyclerion · IDEXX Laboratories · NeuroPore Therapies · RBC Capital Markets · Circumvent Pharma · Biodel · Deloitte. · Link Immunotherapeutics · Palatin · Synaptic Pharma Ltd.

BOARD OF DIRECTORS [1]

Errol De Souza PhD
Executive Chairman

David Wilson
Non-Executive Director

Alan Fisher
Non-Executive Director

Jane Ryan PhD
Non-Executive Director

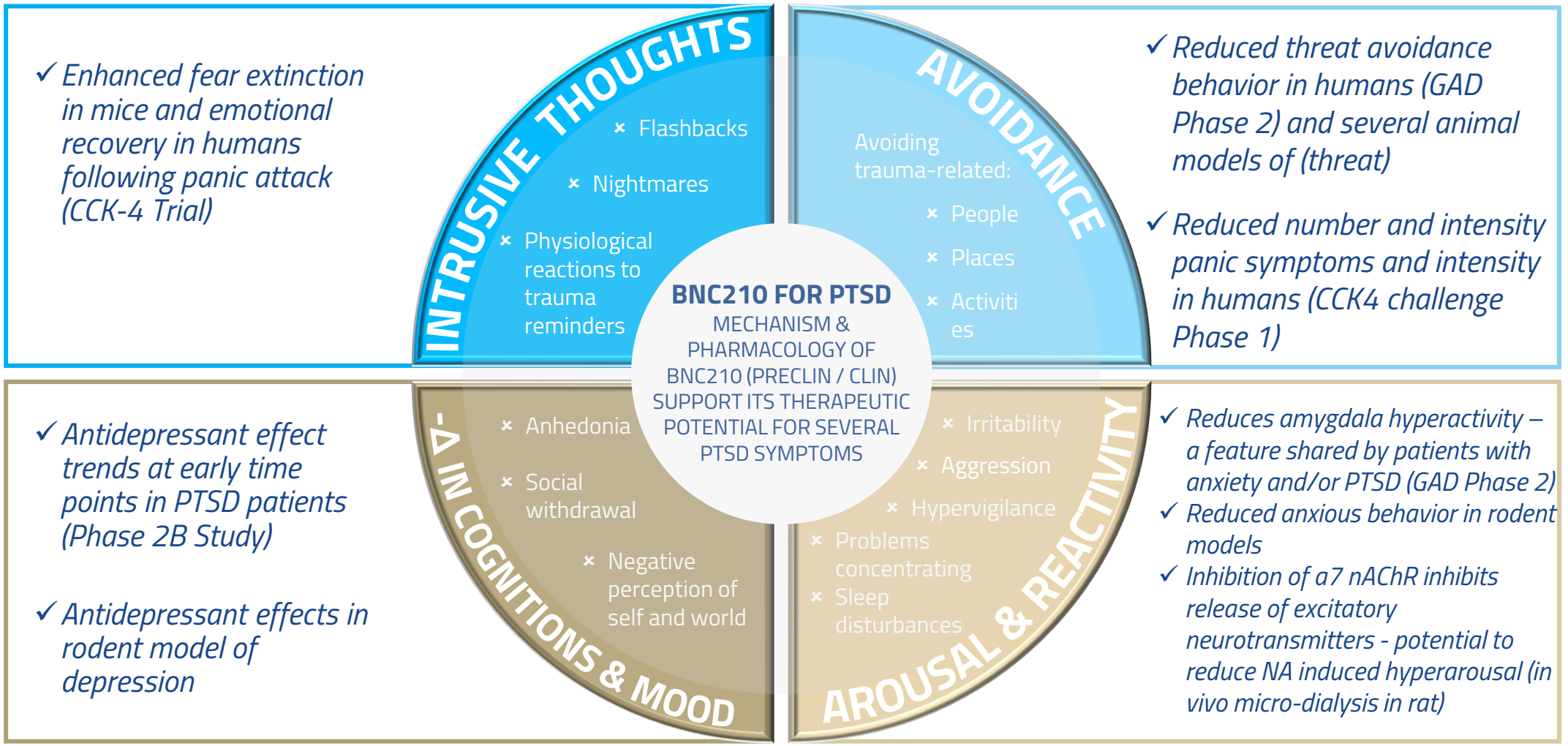
Aaron Weaver
Apeiron Nominee

Miles Davies
Apeiron Nominee

Bionomics · WG Partners · PiperJaffray. · Coopers & Lybrand · idt australia limited · CENTREPOINT ALLIANCE · ANATARA LIFESCIENCES · BCAL diagnostics · APEIRON INVESTMENT GROUP · atai LIFE SCIENCES · A&O · APEIRON INVESTMENT GROUP · Rothschild & Co

1. Logos reflect experience in current and/or past roles.

APPENDIX:
BNC210 Prior Clinical Trial Information


✓ Enhanced fear extinction in mice and emotional recovery in humans following panic attack (CCK-4 Trial)
INTRUSIVE THOUGHTS
× Flashbacks
× Nightmares
× Physiological reactions to trauma reminders
AVOIDANCE
Avoiding trauma-related:
× People
× Places
× Activities
✓ Reduced threat avoidance behavior in humans (GAD Phase 2) and several animal models of (threat)
✓ Reduced number and intensity panic symptoms and intensity in humans (CCK4 challenge Phase 1)
BNC210 FOR PTSD
MECHANISM & PHARMACOLOGY OF BNC210 (PRECLIN / CLIN) SUPPORT ITS THERAPEUTIC POTENTIAL FOR SEVERAL PTSD SYMPTOMS
✓ Antidepressant effect trends at early time points in PTSD patients (Phase 2B Study)
✓ Antidepressant effects in rodent model of depression
-Δ IN COGNITIONS & MOOD
× Anhedonia
× Social withdrawal
× Negative perception of self and world
AROUSAL & REACTIVITY
× Irritability
× Aggression
× Hypervigilance
× Problems concentrating
× Sleep disturbances
✓ Reduces amygdala hyperactivity – a feature shared by patients with anxiety and/or PTSD (GAD Phase 2)
✓ Reduced anxious behavior in rodent models
✓ Inhibition of a7 nAChR inhibits release of excitatory neurotransmitters - potential to reduce NA induced hyperarousal (in vivo micro-dialysis in rat)

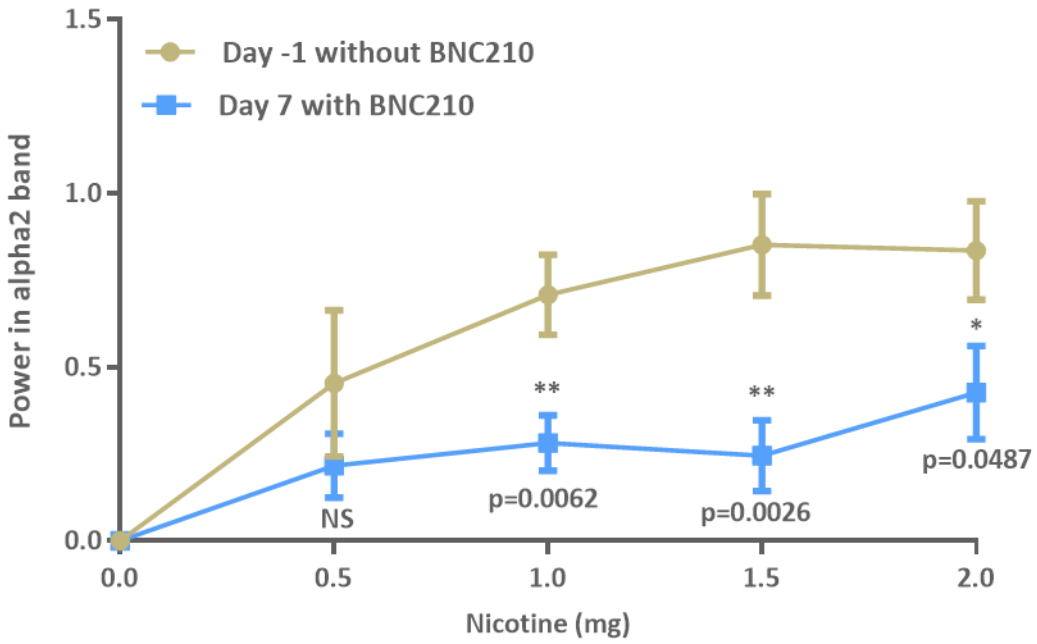
Summary of BNC210 Clinical Trials: Excellent Safety and Tolerability Profile in Healthy Subjects and Patients

Phase	Description	Participants / Setting	Subjects Enrolled / Administered BNC210*	BNC210 Formulation and Doses	Location
1	Single Ascending Dose Safety and PK	Healthy volunteers / In-clinic	32/24	Suspension; single doses (5 to 2000 mg)	Australia
1	Single Ascending Dose Safety and PK; Food Effect	Healthy volunteers / In-clinic	4/3	Suspension; single doses (300 to 2000 mg)	Australia
1	Single Ascending Dose Safety and PK; Food Effect	Healthy volunteers / In-clinic	47/40	Capsule; single doses (300 to 3000 mg)	US
1b	Lorazepam Comparison	Healthy volunteers / In-clinic	24/22	Suspension; single doses (300 and 2000 mg)	France
1b	CCK-4 Panic Attack Model	Healthy volunteers / In-clinic	60/59	Suspension; single doses (2000 mg)	France
1b	Multiple Ascending Dose Safety and PK; Expanded Cohort for EEG Target Engagement	Healthy volunteers / In-clinic	56/44	Suspension; multiple doses (150 to 1000 mg twice daily for 8 days)	France
1	Suspension and Tablet Formulation PK Comparison	Healthy volunteers / In-clinic	6/6	Suspension and tablet; single doses (300 mg)	Australia
1	Single Ascending Dose Safety and PK	Healthy volunteers / In-clinic	5/5	Tablet; single doses (600 to 1200 mg)	Australia
1	Multiple Dosing Safety and PK	Healthy volunteers / In-clinic	10/10	Tablet; multiple doses (900 mg twice daily for 7 days)	Australia
2a	Imaging and Behavioral Study In Generalized Anxiety Disorder	Generalized anxiety disorder patients / In-clinic	27/25	Suspension; single doses (300 and 2000 mg)	UK
2a	Agitation in the Elderly in Hospital Setting	Agitated elderly patients / Hospital	38/18	Suspension; multiple doses (300 mg twice daily for 5 days)	Australia
2	Post-Traumatic Stress Disorder	Post-traumatic stress disorder patients / Out-patient	193/143	Suspension; multiple doses (150, 300 or 600 mg twice daily for 12 weeks)	Australia US
2b	Post-Traumatic Stress Disorder	Post-traumatic stress disorder patients / Out-patient	Ongoing	Tablet; multiple doses (900 mg twice daily for 12 weeks)	US

** The number of enrolled subjects who were administered BNC210; other enrolled subjects were administered placebo only*
CCK-4 = Cholecystokinin Tetrapeptide
EEG = Electroencephalography
PK = Pharmacokinetic

BNC210 ***blood-brain barrier penetration*** *and nicotinic* ***receptor target engagement*** in humans

BNC210 Reduced Nicotine-induced EEG Responses



Activation of nicotinic receptors in the brain ***induces EEG response***

↓

α4β2 and ***α7 receptors*** are the ***major nAChR populations targeted***

↓

BNC210 daily oral dosing reduced nicotine-induced EEG in the α2 band

Observed reduction in EEG response *due to BNC210's* ***negative allosteric modulation*** *of the α7 receptors*

nAChR = Nicotinic Acetylcholine Receptor
EEG = Electroencephalography
* *p-value less than 0.05*
** *p-value less than 0.01*

Study Design	• Multi-center, randomized, double-blind, placebo-controlled • BNC210 150 mg, 300 mg, 600 mg and placebo (1:1:1:1) (liquid suspension formulation taken twice daily, b.i.d.) • 12-week treatment period • 193 participants • 20 US sites / 6 Australian sites
Key Selection Criteria	• Current diagnosis of PTSD as defined by CAPS-5 (Clinician-Administered PTSD Scale for DSM-5)
Key Study Objectives	• To assess the effects of BNC210 on investigator-rated symptoms of PTSD measured by CAPS-5 • To assess the safety and tolerability of BNC210 in subjects with PTSD

No overall effect on primary endpoint of CAPS-5 total severity score at 12 weeks

Australian patients had a greater improvement over placebo than US patients

- ✓CAPS-5 statistically significant at Week 4 in Australians ($p<0.05$)

Evidence of antidepressant effect in high dose treatment group in total population

- ✓CAPS-5 Criterion D overall (negative alterations in cognitions and mood) statistically significant at Week 1 ($p<0.05$)
- ✓CAPS-5 Criterion D, Question 2 (persistent and exaggerated negative beliefs or expectations) statistically significant at Week 1 ($p=0.001$)
- ✓CAPS-5 Criterion D, Question 4 (persistent negative emotional state) statistically significant at Weeks 4 and 8 ($p<0.05$)

Trend for anxiolytic effect in high dose treatment group in the total population

- ✓Trend towards improvement on CAPS-5 Criterion E (marked alterations in arousal and reactivity), Question 3 (hypervigilance)
- ✓Trend towards improvement on CAPS-5 Criterion E, Question 4 (exaggerated startle response)

BNC210 was well tolerated in patients with PTSD

- ✓No trend for increased adverse events with treatment
- ✓No evidence of cognitive impairment
- ✓No evidence of suicidal ideation or behavior worsening

Potential reasons why clinically significant effects and trends seen at early time points did not translate into significant primary endpoint on CAPS-5 at 12 Weeks

- Inadequate overall blood exposure of BNC210
- Lower compliance with liquid suspension formulation which needed to be taken with food

Emerging CNS Pipeline for Partnering

Promising therapeutic strategy for improving cognitive disfunction and social withdrawal symptoms

*Potential in **schizophrenia, Autism Spectrum disorders** and conditions with **cognitive impairments***

~600 COMPOUNDS SYNTHESIZED

2 SERIES PATENTED

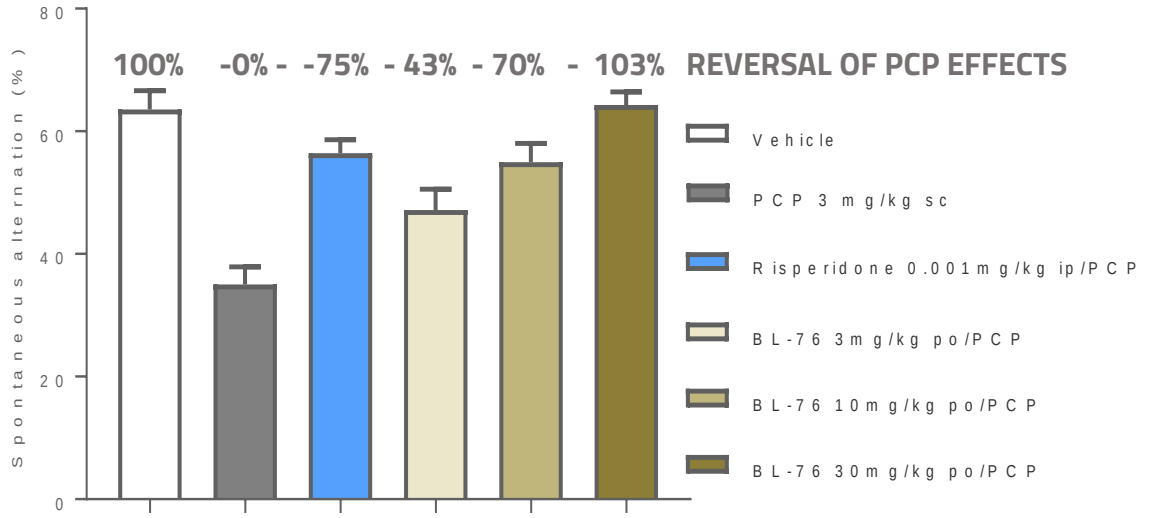
Lead Compound **BL-76**

Back-up Compounds

2 Patents Published

Bionomics' molecules target Kv3.1/3.2 ion channels on parvalbumin positive, gabaergic interneurons in the pre-frontal cortex

Lead Compound BL-76 Fully Reverses PCP-induced Cognitive Deficit in Mice in the T-maze



Disease-Related Genetics

Gain & Loss-of-function mutations in Nav1.7, 1.8 and 1.9

Associated with human pain syndromes where extreme pain or no pain is experienced

BNO Pan Nav inhibitors

Small molecules with functional selectivity for voltage gated sodium channels: Nav1.7, Nav1.8 and potentially Nav1.9

1000+ COMPOUNDS SYNTHESIZED

2 SERIES PATENTED

LEAD COMPOUND BL-017881

BACK-UP COMPOUNDS

3 Patents Published

Lead Candidate Identified

BL-017881

OBSERVED TO REVERSE PAIN IN THE FORMALIN PAW MODEL IN MICE

APPENDIX:
Building Value Through Legacy Oncology Assets

Exclusive BNC101 Oncology License Agreement for the Development of CAR-T Therapeutics

- Exclusive Agreement to license Bionomics' BNC101 oncology drug candidate to Carina Biotech for the development of Chimeric Antigen Receptor T cell (**CAR-T**) therapy, which harnesses the body's immune system to fight cancer.
- Bionomics is eligible to receive up to A$118 million in clinical & development milestones plus royalty payments if Carina fully develops and markets the new therapy. In the event that Carina sub-licenses the CAR-T treatment, Bionomics is eligible to share in the sub-licensing revenues in early clinical development and receive a substantial double-digit portion of the revenues in later stages of clinical development.
- ***In September 2021, Carina announced that it plans to initiate a clinical trial of BNC101 CAR-T therapy for the treatment of advanced colorectal (bowel) cancer in late 2022***
- Bionomics retains BNC101 for other types of therapies