Bionomics Limited

ABN 53 075 582 740

ASX ANNOUNCEMENT
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Publication of Positive BNC210 Phase 2a Data in Generalised Anxiety Disorder Patients

Bionomics Limited (ASX: BNO, OTCQB: BNOEF), a global, clinical stage biopharmaceutical company, today announced the online publication of their paper entitled *Cholinergic Modulation of Disorder-Relevant Human Defensive Behaviour in Generalised Anxiety Disorder* authored by Perkins *et. al.* in the peer-reviewed journal *Translational Psychiatry 11:13 (2021)*. This paper describes the effect of BNC210 on the intensity of threat-avoidance behaviour in Generalised Anxiety Disorder (GAD) patients in a placebo-controlled study conducted at the Institute of Psychiatry, Psychology and Neuroscience (IoPPN) at King's College London (KCL).

Using a computerised test of human threat-avoidance or defensive behaviour called the Joystick Operated Runway Task, BNC210 significantly reduced Flight Intensity relative to placebo in 21 female GAD patients. The same patients also reported significantly reduced levels of anxiety following administration of BNC210 compared to placebo, providing a behavioural-emotional link that suggests BNC210 has general promise as a drug to treat anxiety.

Additional data from the same study were published last year (Wise *et. al.*, Cholinergic Modulation of Disorder-Relevant Neural Circuits in Generalized Anxiety Disorder, *Biological Psychiatry 87:908-915, 2020*) and showed, with functional magnetic resonance imaging (fMRI) of the brain, that BNC210 treatment significantly reduced amygdala reactivity to "fearful faces" relative to placebo and reduced connectivity between the amygdala and the anterior cingulate cortex network in GAD patients. fMRI studies have previously shown that GAD is associated with hyperactivity and connectivity in the amygdala-anterior cingulate cortex networks in the brain, and the normalisation of this irregular activity is thought to be critical for successful anxiety treatment.

BNC210 was safe and well tolerated in the GAD patients that took part in the King's College London study. "This unique safety profile separates BNC210 from current acute anxiety therapies like lorazepam, which have serious side effects including sedation, addiction potential, and memory and motor impairment." said Principal Investigator, Professor Allan H Young, Director, Centre for Affective Disorders, IoPPN at KCL. "These data provide evidence that BNC210 may have the potential to make a real clinical difference for patients with anxiety."

BNC210, Bionomics' proprietary compound, is a novel, negative allosteric modulator (NAM) of the alpha 7 nicotinic acetylcholine receptor (α7 nAChR) in development for the treatment of anxiety and stressor-related disorders. It has been granted Fast Track designation by the US Food and Drug Administration (FDA) for the treatment of Post-Traumatic Stress Disorder (PTSD) and other trauma-related and stress-related disorders.

“Bionomics is preparing for a Phase 2b trial with BNC210 in PTSD patients that will commence in mid-2021. The demonstration of anti-anxiety potential of BNC210 in GAD patients supports our investigations into PTSD patients who experience anxiety as one of their four symptom clusters and exhibit similar fMRI changes in neural activity and connectivity as seen in GAD patients” said Dr. Errol De Souza, Executive Chairman of Bionomics.

About Translational Psychiatry

Translational Psychiatry is a *Nature Research* journal focusing on the translational pathway between research in neuroscience and conceptually novel treatments and is the highest-ranked open access journal in Psychiatry.

About Anxiety Disorders

Anxiety is the most common mental health condition in Australia. On average, one in three women and one in five men will experience anxiety at some stage in their life. Anxiety disorders are also the most common mental illness in the U.S., affecting 40 million adults age 18 and older, or 18.1% of the population every year.

AUTHORISED BY: DR ERROL DE SOUZA, EXECUTIVE CHAIRMAN

FOR FURTHER INFORMATION PLEASE CONTACT:

Mr Jack Moschakis
Legal Counsel & Company Secretary
Bionomics Limited
31 Dalgleish St,
Thebarton, South Australia
+61 8 8354 6100
jmoschakis@bionomics.com.au

About Bionomics Limited

Bionomics (ASX: BNO, OTCQB:BNOEF) is a global, clinical stage biopharmaceutical company leveraging its proprietary platform technologies to discover and develop a deep pipeline of best in class, novel drug candidates. Bionomics’ lead drug candidate BNC210, currently in development for initiation of a second Phase 2 trial for the treatment of PTSD, is a novel, proprietary negative allosteric modulator of the alpha-7 (α7) nicotinic acetylcholine receptor. Beyond BNC210, Bionomics has a strategic partnership with Merck & Co., Inc (known as MSD outside the United States and Canada).

www.bionomics.com.au

Factors Affecting Future Performance

This announcement contains "forward-looking" statements within the meaning of the United States’ Private Securities Litigation Reform Act of 1995. Any statements contained in this announcement that relate to prospective events or developments, including, without limitation, statements made regarding Bionomics’ drug candidates (including BNC210), its licensing agreements 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 funding arrangements, 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, our inability to integrate acquired businesses and technologies into our existing business and to our competitive advantage, 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.