TO IMPROVE THE LIVES OF PEOPLE LIVING WITH SERIOUS CNS DISORDERS

Corporate Presentation
BNO (Australia: ASX)
BNOEF (USA: OTCQB)

H.C. Wainwright Global Life Sciences Conference
March 9-10, 2021
Factors Affecting Future Performance
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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.

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Bionomics
INVESTMENT HIGHLIGHTS

• Global, clinical stage biopharmaceutical company developing a pipeline of novel drug candidates targeting ion channels in Central Nervous System (CNS) disorders

• Lead clinical candidate BNC210 in Phase 2 with Fast Track designation from FDA for treatment of Post-Traumatic Stress Disorder (PTSD)

• Strategic partnership with Merck & Co., with multiple therapeutic candidates in development for treatment of cognitive impairment in Alzheimer's Disease

• Emerging CNS partnering pipeline of ion channel candidates for treatment of pain and cognitive deficits

• Additional value in non-core Phase 1-2 oncology assets through external funding and partnering

• Experienced Management and Board of Directors

• Strong international investor base

• Financials at 28 February 2021- Market Capitalization: ~ A$286 M; Cash: ~A$17.9 M; Entitlement Offer launched March 8, 2021
Partnerships

- Leverage Merck partnership for Alzheimer’s through milestones & royalties
- Partner pre-clinical ion channel programs for pain and cognitive deficits
- Realize value of legacy oncology assets through partnering and/or external funding

Finance

- Leverage Australian R&D Tax Incentives to extend cash runway
- Expand global institutional investor base
- Reduce internal cash burn through focus on BNC210 PTSD development and outsourcing model

BNC210

- Fund internal development for the treatment of PTSD to Phase 2b
- Partner/co-development for other anxiety, stress and depression-related indications
STOCK & FINANCIAL INFORMATION

- Cash at 28 February 2021: A$17.9 M
- Share Register Issued Capital 845,534,681 Shares
- Market Capitalization of ~A$286 M (at Feb 26, 2021)
- Significant Investors
  - Biotechnology Value Fund
  - Apeiron Investment Group Ltd.
  - Thiel Capital
  - Galaxy Investment Partners (M Novogratz)
  - Merck & Co

Global Distribution

- 42% North America
- 30% Europe
- 23% Pacific
- 5% Other

Bionomics
Errol De Souza PhD
Executive Chairman

- More than 35 years experience in biotech, big pharma and academia
- Previous President & CEO of multiple public (Biodel, Synaptic) & private (Neuropore, Archemix) biotech companies
- Founder of Neurocrine Biosciences
- Previous SVP Aventis Pharmaceuticals
- Previous Head of CNS Diseases, DuPont Merck
- Multiple public and private boards

Adrian Hinton
Acting Chief Financial Officer

- Over a 43 year career at Deloitte (Adelaide)
- Retired in 2018 as Principal Audit and Assurance Group
- Broad-based knowledge of contemporary accounting and audit issues in a wide range of industries
- Experience in preparing Due Diligence reviews, investigative accounting reports and review of profit forecasts

Jack Moschakis
Legal Counsel & Company Secretary

- Over 26 years experience as a legal practitioner
- Joined Bionomics in 2015
- Held senior Legal / Company Secretary roles in the Energy and Resources sectors
- Extensive experience in commercial, contractual and regulatory related legal matters

Liz Doolin
Vice President Clinical Development

- 25 year international career in drug discovery, clinical and life sciences research
- Joined Bionomics in 2008
- Extensive clinical operations and regulatory experience
- Oncology and CNS drug development
- Strong biotechnology research and manufacturing background

Bionomics
# FOCUSED CNS PIPELINE

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>PRE-IND</th>
<th>PHASE 1</th>
<th>PHASE 2A</th>
<th>PHASE 2B</th>
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<tbody>
<tr>
<td><strong>BNC210</strong></td>
<td>PTSD study, 193 pts, results released October 2018</td>
<td>Agitated Elderly in Hospital Setting, exploratory study, 38 pts, results released June 2019</td>
<td>GAD study, 24 pts, results released September 2016</td>
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<tr>
<td>α7 nAChR* Negative Allosteric Modulator (NAM)</td>
<td>Panic – CCK panic model in 15 healthy volunteers</td>
<td>Nicotine-induced EEG changes in 24 healthy volunteers</td>
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<td></td>
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<tr>
<td><strong>MERCK &amp; CO. COLLABORATION</strong></td>
<td>Phase 1 studies ongoing</td>
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<tr>
<td>α7 nAChR* Positive Allosteric Modulator (PAM)</td>
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<tr>
<td><strong>PAIN</strong></td>
<td>Candidate</td>
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<td>Nav1.7/1.8 Inhibitors</td>
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<td><strong>COGNITION</strong></td>
<td>Series Lead</td>
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<td>Kv3.1/3.2 Activators</td>
<td></td>
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</table>

* nAChR = nicotine acetylcholine receptor
BNC210 is a Novel, Negative Allosteric Modulator of the \( \alpha_7 \) Nicotinic Acetylcholine Receptor with Anxiolytic and Antidepressant Properties

Acetylcholine binds to orthosteric sites on the \( \alpha_7 \) receptor

Calcium ions flow through the channel when \( \alpha_7 \) receptors are activated by acetylcholine

BNC210 binds to allosteric sites on the \( \alpha_7 \) receptor

Allosteric sites in the transmembrane domain

Five alpha subunits make up the \( \alpha_7 \) receptor=Five potential binding sites

Bionomics
Action of BNC210 Depends on Acetylcholine Neurotransmission and Allosteric Modulation of $\alpha_7$ nAChR

NAMs have self-limiting activity determined by the cooperative interaction between the compounds binding at the allosteric and orthosteric sites e.g., BNC210 and acetylcholine.
BNC210: Next Generation Drug Candidate with Potential to Treat Anxiety, Depression, PTSD and other Stress-Related Disorders

- Novel, orally-administered, first-in-class, negative allosteric modulator (NAM) of the α7 nicotinic acetylcholine receptor
- Large market potential for treatment of multiple psychiatric indications
- Strong safety database in humans – 12 clinical trials with exposure in ~400 subjects
- Demonstrated nicotinic receptor target engagement in healthy subjects
- Proof of biology in healthy subjects (anti-panic) and in Generalized Anxiety Disorder patients (anti-anxiety)

### Potential Competitive Advantages of BNC210*

<table>
<thead>
<tr>
<th>Drug</th>
<th>No sedation</th>
<th>No withdrawal syndrome</th>
<th>No memory impairment</th>
<th>Fast acting</th>
<th>No drug/drug interactions</th>
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<tbody>
<tr>
<td>BNC210</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Valium and other benzodiazepines</td>
<td>X</td>
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<td>X</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Prozac and certain other SSRIs/SNRIs</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

*Based on data from preclinical studies, Phase 1 & 2 clinical trials.
BNC210 Targets Multi-Billion Dollar Markets with Unmet Need: US Market Potential

- Innovative, first-in-class
- Unmet need in large patient populations
- Advancement in care
- Limited branded competition
- Ability to achieve large market share

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1. PTSD
   - US Prevalence: 8.7-9M
   - US$4.7b
   - Eligible Patient Population: 1.7M
   - US$1.5b

2. MDD + Anx
   - US Prevalence: 8-8.5M
   - US$3.2b
   - Eligible Patient Population: 1.0M
   - US$1.5b

3. BP + Anx
   - US Prevalence: 3-3.5M
   - US$1.5b
   - Eligible Patient Population: 0.5M
   - US$0.5b

4. Panic
   - US Prevalence: 6.5-7M
   - US$4.4b
   - Eligible Patient Population: 1.5M
   - US$2.5b

5. SAD
   - US Prevalence: 17M
   - US$2.5b
   - Eligible Patient Population: 0.5M
   - US$0.5b

6. Agitation
   - US Prevalence: 7.8M
   - US$2.3b
   - Eligible Patient Population: 0.5M
   - US$0.5b

7. GAD
   - US Prevalence: 7M
   - US$2.7b
   - Eligible Patient Population: 0.9M
   - US$0.9b

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*Assume 5% premium to Trintellix 2016 AWP for 30-day supply of $380 – Compliance Adjusted

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1. 3.4%-4% prevalence >18yrs., ~25% of patients diagnosed and treated
2. 6.7% prevalence, ~50% co-morbid anxiety, ~50% diagnosed and treated
3. ~2.9% prevalence, 50% co-morbid anxiety (range in literature 25 to 75%), ~50% diagnosed and treated
4. ~2.7% prevalence, ~50% diagnosed and treated
5. ~6.8% prevalence, 15-20% diagnosed and treated
6. ~3.1% dementia prevalence >40yrs., ~9% agitation patients diagnosed and treated
7. 3.1% GAD prevalence, assumes ~25% diagnosed and treated, ~50% of SSRI patients treated are partial responders or relapsers

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Post-Traumatic Stress Disorder (PTSD)  Major Depressive Disorder (MDD)  Bipolar Disorder (BP)  Social Anxiety Disorder (SAD)  Generalized Anxiety Disorder (GAD)

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Bionomics
• The EEG response to nicotine is achieved through activation of nicotinic receptors in the brain. The major populations targeted are α4β2 and α7 receptors.
• Oral dosing with 2000 mg BNC210 for 7 days reduced nicotine-induced EEG power in the α2 band.

Reduction in the EEG response is due to negative allosteric modulation of the α7 receptors by BNC210
BNC210 Enhanced Fear Extinction in Mice - This Translated to Rapid Improvement Following a CCK-4-Induced Panic Attack in Healthy Subjects

Conditioned Fear Extinction Model

MICE
BNC210 enhanced fear extinction following conditioned stimulus training

Emotional Visual Analog Scale (eVAS)

HUMANS
BNC210 improved rate of return to emotional stability following CCK-4 challenge

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

Bionomics
BNC210 Significantly Reduced CCK-4-Induced Panic Symptoms in Humans

37.7% Reduction in Total Symptoms (p<0.05)

52.7% Reduction in Symptom Intensity (p<0.05)

Reduction in total number of panic symptoms and panic symptom intensity - measured with the panic symptom scale

Evaluation conducted in 15 healthy volunteers who experienced a CCK-4-induced panic attack
BNC210 Phase 2 Trial in Generalized Anxiety Disorder (GAD) Demonstrated Acute Anxiolytic Activity

- Two single doses of BNC210 (300 and 2000 mg), lorazepam (1.5 mg) and placebo were administered to GAD patients
- 24 subjects received all treatments (4-way crossover study)
- Patients were exposed to ‘fearful faces’ while in a Magnetic Resonance Imaging (MRI) machine and also performed a behavioural task called the Joystick Operated Runway Task (JORT)

Viewing fearful faces caused activation of the L & R amygdala which was significantly reduced by administration of BNC210 (300 mg) (p<0.001)

BNC210 (300 mg) significantly reduced connectivity between the amygdala and ACC while viewing fearful faces (p<0.05)

BNC210 (300 & 2000 mg) significantly reduced threat avoidance behaviour of anxious subjects in the JORT behavioural task

- Amygdala activation is an imaging surrogate for anxiety
- Connectivity between the amygdala and anterior cingulate cortex (ACC) is very strong in high anxiety

## Phase 2 Trial of BNC210 in Adults with Post-Traumatic Stress Disorder (PTSD)

### 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)
- Concomitant use of one anti-depressant medication allowed

### 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
BNC210 PTSD Trial Overall Conclusions

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)

Evidence of 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 safe and 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 4 Weeks 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
BNC210 PTSD Trial: Population Pharmacokinetic Modelling and Pharmacometric Analyses

Population pharmacokinetic modelling indicated that plasma levels of BNC210 were substantially lower than expected using the liquid suspension formulation in this out-patient trial setting.

Pharmacometric analysis established an exposure-response relationship for CAPS-5 total severity scores where higher AUC values (plasma exposure) were related to a larger effect (p<0.01).

~25 mg.hr/L is the model predicted AUC$_{90}$ being targeted in future BNC210 trials in PTSD patients.
PTSD trial results indicated that the liquid suspension formulation of BNC210 did not achieve sufficient exposure in the out-patient setting.

Benefits of a solid dose formulation (tablets):

- Simple to administer with no need for thorough resuspension
- Formulated to overcome the need to take with food (the liquid suspension needs to be administered with food to give best exposure)

Progress to Date:

- Spray dry dispersion technology used to manufacture BNC210 tablets
- Human single dose PK studies completed
- Human 7-day dosing PK study completed and Phase 2b PTSD trial dose determined
BNC210 Tablet Formulation Overcomes Food Effect of the Liquid Suspension and has Dose Linear Exposure

**Trial BNC210.009:** single 300 mg dose of BNC210 liquid suspension *versus* solid dose formulation (fed and fasted conditions)

**Trial BNC210.010:** single 600, 900 and 1200 mg doses of solid dose formulation in fasted subjects

AUC >25 mg.hr/L achieved at BNC210 tablet doses of 900 mg and higher in fasted subjects
**Trial BNC210.011**: 900 mg BNC210 solid dose formulation dosed twice daily in a 7-day PK study

Healthy volunteers were given a 900 mg BNC210 dose on Day 1 (Time 0) and frequent blood samples were taken over the next 24-hour period. On Days 2-7 (Time 24-144 hours) subjects were dosed with 900 mg BNC210 twice daily and blood samples were taken once daily (‘Daily Trough Concentrations’). On Day 7 (Time 144 hour), subjects were dosed in the morning and frequent blood samples were taken over the next 24-hour period. The data show that even the lowest ‘Mean Daily Trough Concentrations’ meet or exceed the 12-hourly blood exposure of 25 mg.hr/L (equivalent to a mean blood concentration of ~2,100 ng/mL) targeted by the pharmacometric analysis.

**Estimated Target Mean Plasma Concentration**

**BNC210 Plasma Concentration (ng/mL)**

**Mean Daily Trough Concentrations**

**Mean Concentration versus Time**

**Dose = BNC210 900 mg**

<table>
<thead>
<tr>
<th>Steady State (Day 7) 12-Hourly Plasma Exposure (mg.hr/L)</th>
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<tbody>
<tr>
<td><strong>Number</strong></td>
</tr>
<tr>
<td>All participants</td>
</tr>
<tr>
<td>Females</td>
</tr>
<tr>
<td>Males</td>
</tr>
</tbody>
</table>

**Bionomics**
The 7-day dosing PK study in ten healthy volunteers (females and males) demonstrated that at a dose of 900 mg given twice daily, the tablet formulation of BNC210 had steady-state exposure levels ranging from 33-57 mg.hr/L, exceeding the target blood exposure of 25 mg.hr/L.

With the BNC210 tablet in a 7-day multi-dosing PK study:

- Steady state blood exposures were reached after one day of twice daily dosing.
- Steady state 12-hourly blood exposures reached a mean of 49 mg.hr/L exceeding the target 12-hourly exposure of 25 mg.hr/L projected from the pharmacometrics analysis.
- There were no gender differences in female and male blood exposure levels.
- BNC210 continues to be well-tolerated at these higher exposures.

**Bionomics**
BNC210 is Back on Track to Leverage Large Opportunity for Treatment of PTSD

Key Milestones Towards Continuing Development of BNC210 for the Treatment of PTSD

**2019**
- ✓ Pharmacometric analysis of the Phase 2 PTSD trial data showed potential for significant patient benefit provided adequate drug exposure is achieved
- ✓ BNC210 solid dose formulation achieved exposures adequate for future development
- ✓ FDA Type C Meeting provided positive feedback on the BNC210 development program for the treatment of PTSD
- ✓ FDA granted Fast Track designation to BNC210 for the treatment of PTSD

**2020**
- ✓ Optimized and selected the tablet formulation for a Phase 2b clinical trial
- ✓ Manufactured BNC210 tablets for a multiple dosing PK trial in healthy volunteers

**2021**
- ✓ BNC210 dose for Phase 2b PTSD trial has been determined
- ✓ Large scale manufacture of BNC210 drug substance and tablets for Phase 2b trial are in progress
- ✓ Start of Phase 2b PTSD trial projected for mid 2021
Memorandum of Understanding (MoU) with EmpathBio Inc (EmpathBio) to collectively explore a combination drug treatment regimen with Bionomics’ BNC210 and EmpathBio's 3,4-Methylenedioxymethamphetamine (MDMA) derivative EMP-01.

MDMA-assisted psychotherapy has demonstrated significant symptom improvement in PTSD patients and the 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.

MoU with EmpathBio has drawn together an initial collaborative framework of preclinical studies, in which we can develop informed views about the possibility of a combination treatment regimen warranting clinical evaluation at a later date.
Global License and Collaboration Agreement with MSD (Merck & Co.) in Cognition Provides Validation


- MSD (a tradename of Merck & Co., Inc., Kenilworth NJ USA) Collaboration Update:
  - Phase 1 safety clinical trials of the lead molecule in healthy subjects have been completed and there are ongoing plans for further biomarker studies.
  - A backup molecule that showed an improved potency profile in preclinical animal models versus the current lead molecule is advancing into Phase 1 clinical trials.

- Agreement covers research on BNC375 and related compounds.
- BNC375 demonstrated potent memory enhancing properties in animal models – both episodic and working memory improved.
- Targeting cognitive impairment in Alzheimer’s, Parkinson’s and other conditions.
Small molecule Kv3.1 / Kv3.2 potassium ion channels activators

• Kv3.1 / Kv3.2 activators represent a promising therapeutic strategy for improving cognitive dysfunction and negative symptoms in schizophrenia and other illnesses such as Autism Spectrum Disorder and Alzheimer’s Disease

• ~600 compounds synthesized; 3 chemical series developed and 2 series patented

• Lead compound BL-76 fully reverses PCP-induced cognitive deficit in mice in the T-maze test

Small molecule pan Nav inhibitors for treatment of chronic pain

• Gain and loss-of-function mutations in Nav1.7, 1.8 and 1.9 have been associated with human pain

• 1000+ compounds synthesized; 3 chemical series developed and patented

• Bionomic’s pan Nav inhibitors with functional selectivity for voltage gated sodium channels Nav1.7, Nav1.8 and potentially Nav1.9 offer potential to develop non-addictive therapeutics for chronic pain with less side effects
BNC105 - a multi-modal small molecule tubulin polymerization inhibitor has completed four Phase 1 and Phase 2 clinical trials

• Two externally-funded investigator-initiated clinical trials are in progress:
  – Phase 2 trial of BNC105 in combination with nivolumab (Opdivo) for the treatment of metastatic colorectal cancer sponsored by the Australasian Gastro-Intestinal Trials Group (AGITG) and funded by BMS; patient enrolment at 16 sites across Australia is complete with final results projected for 2Q2021
  – Phase 1 trial of BNC105 in combination with ibrutinib (Imbruvica) for the treatment of chronic lymphocytic leukemia funded by the Leukemia & Lymphoma Society (US)

BNC101 - a first-in-class humanized monoclonal antibody to LGR5, a cancer stem cell receptor

• BNC101 clinical dose and schedule were established in a Phase 1 trial in patients with metastatic colorectal cancer (CRC) - the recommended Phase 2 dose was identified
• Phase 2 ready: BNC101 in combination with standard of care treatment for gastro-intestinal cancers overexpressing LGR5
• Potential for BNC101 to be developed as an Antibody-Drug-Conjugate (ADC) therapeutic or in combination with CAR-T therapy being explored
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.

Bionomics retains BNC101 for other types of therapies.
Bionomics 2021 Progress Year-to-Date

- January 4: Bionomics Initiates 7-Day Dosing Pharmacokinetic Study of BNC210 Tablet Formulation
- January 18: Publication of Positive BNC210 Phase 2a Data in Generalized Anxiety Disorder Patients
- January 20: Treatment of Colorectal Cancer Patients in Phase 2 BNC105/Nivolumab Combination Clinical Trial Completed – Topline Data in 2Q2021
- February 9: $16 Million Capital Raise to Progress BNC210 PTSD Trial
- February 11: Novamind Announces Strategic Investment in Bionomics to Support PTSD Clinical Trial
- February 17: Bionomics & EmpathBio Memorandum of Understanding to determine feasibility of BNC210 & EMP-01 (MDMA) trial
- February 22: Positive BNC210 7-Day Dosing Pharmacokinetic Study Exceeds Blood Exposure Projected for PTSD Trial
- February 26: Bionomics’ Half-Year Report
- March 2: Completion of Placement (announced on February 9) & Cleansing Notice
- March 8: Bionomics Limited Announces Accelerated Non-Renounceable Entitlement Offer
Balanced business model with potential for short term milestones to drive shareholder value:

- Internal development of BNC210 is back on track with a solid dose formulation to achieve the blood exposure required for future PTSD trials, along with positive feedback from the FDA and Fast Track designation provide a promising opportunity for the company in 2021 and beyond.

- Strengthened strategic investor base with committed funding for BNC210 development.

- We continue to pursue licensing and partnering possibilities for our core CNS pain and cognition programs and have an ongoing collaboration with Merck & Co.

- Maximize the value and partnering potential of legacy oncology assets through external funding of clinical programs.

- Cost cutting measures and divestitures implemented in 2019-2020 along with leveraging Australian R&D Tax Incentive Refund allow us to extend cash runway with non-dilutive funding.
APPENDIX
Errol De Souza PhD  
Executive Chairman

- More than 35 years experience in biotech, big pharma and academia
- Previous President & CEO of multiple public (Biodel, Synaptic) & private (Neuropore, Archemix) biotech companies
- Founder of Neurocrine Biosciences
- Previous SVP Aventis Pharmaceuticals
- Previous Head of CNS Diseases, DuPont Merck
- Multiple public and private boards

Alan Fisher  
Non-Executive Director

- 24 years at accounting firm Coopers & Lybrand as lead Advisory Partner – Melbourne Corporate Finance Division
- Last 22 years as founder of his own Corporate Advisory company specializing in M&A business restructurings, strategic advice and capital raisings for small cap companies
- Non-Executive chairman – Centrepoint Alliance Ltd & IDT Aust.
- Non-Executive Director and chair of Audit and Risk committee of Thorney Technology

David Wilson  
Non-Executive Director

- Chairman & Founding Partner of WG Partners
- Over 30 years’ experience in investment banking in City of London
- Previous CEO of Piper Jaffray Ltd
- Previous Joint Head of UK Investment Banking Group, ING Barings
- Previous head of Small Companies Corporate Finance, Deutsche Bank
- Previous Head of Small Companies Corporate Broking, UBS

Jane Ryan PhD  
Non-Executive Director

- Over 30 years of international experience in the pharmaceutical and biotechnology industries
- Worked in Australia, the US and the UK with companies including Peptech, Roche, Cambridge Antibody Technology and Biota Holdings
- Led many successful fundraising campaigns and Licensing initiatives inclusive of a $230m US government contract
- Chair of the Advisory Board of the ithree Institute at the University of Technology Sydney (UTS)
Srinivas Rao PhD
Non-Executive Director

• Chief Scientific Officer at ATAI Life Sciences AG
• Over 19 years of professional experience in pharmaceutical and biotechnology industries
• Has held the titles of Chief Scientific, Medical, or Executive Officer at companies ranging from Venture backed start-ups to vertically-integrated publicly traded pharmaceutical companies
• PhD in neurobiology form Yale Graduate School
• M.D. from Yale School of Medicine

Aaron Weaver
Non-Executive Director

• Managing Director at Apeiron Investments focused on the life sciences sector
• Snr General Counsel supporting fundraising & IR at ATAI Life Sciences AG
• Qualified Chartered Financial Analyst (CFA) and a registered solicitor in the UK
• Previously an investor banker at Credit Suisse in London within the Capital Markets Solutions team
• Previous capital markets solicitor at Allen & Overy LLP

Mitchell Kaye
Non-Executive Director

• COO BVF Partners
• Founding member of Xmark Opportunity Partners LLC
• Founding member of Brown Simpson Asset Management LLC
• Founder of MedClaims Liaison LLX
• Previous Managing Director Navigant Capital Advisors, Head of Navigants Financial Institutions restructuring Solutions team
Our Proprietary Platform Technologies and CNS Therapeutic Focus

**Therapeutic Areas**
- PTSD
- Anxiety
- Agitation
- Depression
- Cognitive/Memory Deficits
- Pain

**MultiCore**
- A diversity orientated chemistry platform for the discovery of small molecule drug candidates
  - Computer aided pharmacophore modelling
  - Scaffold hopping synthetic approaches rapidly create diversity in small, focused libraries
  - Parallel, differentiated chemical series of potential drug candidates

**ionX**
- Identifies drug candidates targeting both ligand gated and voltage gated ion channels
- Proprietary cell lines and screening approaches
- Comprehensive in vivo models validate target biology

**Bionomics**
<table>
<thead>
<tr>
<th>Protocol Number</th>
<th>Phase</th>
<th>Description</th>
<th>Subjects Enrolled / Administered BNC210</th>
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<td>Safety and Tolerability of Single Ascending Doses in Healthy Volunteers</td>
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<td>83/67</td>
<td>US</td>
</tr>
<tr>
<td>ICP-2143-101</td>
<td></td>
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<tr>
<td>BNC210.003</td>
<td>1b</td>
<td>Lorazepam &amp; BNC210 Comparison in Healthy Volunteers</td>
<td>24/22</td>
<td>France</td>
</tr>
<tr>
<td>BNC210.004</td>
<td>1b</td>
<td>Panic Attack Model in Healthy Volunteers</td>
<td>60/59</td>
<td>France</td>
</tr>
<tr>
<td>BNC210.005</td>
<td>1b</td>
<td>Safety and Tolerability of Multiple Ascending Doses and EEG Target Engagement Study with Nicotine in Healthy Volunteers</td>
<td>56/44</td>
<td>France</td>
</tr>
<tr>
<td>BNC210.006</td>
<td>2a</td>
<td>Imaging and Behavioral Study In Generalized Anxiety Disorder Patients</td>
<td>27/25</td>
<td>UK</td>
</tr>
<tr>
<td>BNC210.007</td>
<td>2</td>
<td>Post-Traumatic Stress Disorder</td>
<td>193/143</td>
<td>Australia</td>
</tr>
<tr>
<td>BNC210.008</td>
<td>2a</td>
<td>Agitation in the Elderly in Hospital Setting</td>
<td>38/18</td>
<td>Australia</td>
</tr>
<tr>
<td>BNC210.009</td>
<td>1</td>
<td>Single Dose Pharmacokinetics of BNC210 Solid Dose Formulation in Healthy Volunteers</td>
<td>11/11</td>
<td>Australia</td>
</tr>
<tr>
<td>BNC210.010</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BNC210.011</td>
<td>1</td>
<td>7-Day Pharmacokinetics of BNC210 Solid Dose Formulation in Healthy Volunteers</td>
<td>10/10</td>
<td>Australia</td>
</tr>
</tbody>
</table>
Emerging CNS Pipeline for Partnering
Kv3.1 / Kv3.2 activators represent a promising therapeutic strategy for improving cognitive dysfunction and negative symptoms in schizophrenia and other illnesses such as Autism Spectrum Disorder and Alzheimer’s Disease.

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.
Pan Nav Inhibitors Offer Potential to Develop Non-Addictive Therapeutics for Chronic Pain with Less Side Effects

Gain & Loss-of-function mutations in Nav1.7, 1.8 and 1.9 have been associated with human pain syndromes where extreme pain or no pain is experienced.

Bionomics’ Pan Nav inhibitors are small molecules with functional selectivity for voltage gated sodium channels: Nav1.7, Nav1.8, hERG and potentially Nav1.9

1000+ COMPOUNDS SYNTHESIZED

3 CHEMICAL SERIES DEVELOPED

3 SERIES PATENTED

Back-up Compounds

Lead Compound BL-017881

3 Patents Published

Lead Candidate Identified

BL-01781

✓ 100% pain reduction (100 mg/kg)
✓ No side effects (300 mg/kg)
✓ 40x selectivity over hERG
✓ CNS penetrant
Oncology Assets: Build Value Through External Funding
## Bionomics’ Oncology Assets

<table>
<thead>
<tr>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BNC105: a multi-modal, small molecule tubulin polymerization inhibitor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solid Cancers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLORECTAL: in combination with nivolumab; externally funded; Phase 2 ongoing (AUS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RENAL: in combination with everolimus; Phase 2 completed; biomarker-based Phase 2/3 ready</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MESOTHELIOMA: monotherapy; Phase 2 completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVARIAN: in combination with gemcitabine + carboplatin; Phase 1 completed; Phase 2 ready</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADVANCED SOLID TUMOURS: monotherapy dose escalation; Phase 1 completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Blood Cancers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHRONIC LYMPHOCYTIC LEUKEMIA: in combination with ibrutinib; externally funded; Phase 1 ongoing (US)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACUTE MYELOID LEUKEMIA: preclinical data available; Phase 1/2 ready</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BNC101: a first-in-class humanized monoclonal antibody to LGR5, a cancer stem cell receptor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solid Cancers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLORECTAL: monotherapy dose escalation; Phase 1 completed; Phase 2 ready</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PANCREATIC: in combination with SOC; preclinical data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COLORECTAL: in combination with anti-PD-1; preclinical data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANTIBODY DRUG CONJUGATE: preclinical data</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- **COLORECTAL**
  - BNC105: Phase 1 completed, Phase 2 ongoing (AUS)
  - BNC101: Preclinical data available
- **RENAL**
  - BNC105: Phase 2 completed
- **MESOTHELIOMA**
  - BNC105: Phase 2 completed
- **OVARIAN**
  - BNC105: Phase 1 completed, Phase 2 ready
  - BNC101: Preclinical data available
- **ADVANCED SOLID TUMOURS**
  - BNC105: Phase 1 completed
- **CHRONIC LYMPHOCYTIC LEUKEMIA**
  - BNC101: Phase 1 ongoing (US)
  - BNC105: Preclinical data available
- **ACUTE MYELOID LEUKEMIA**
  - BNC101: Preclinical data available

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*Bionomics*
BNC105 - a Multi-Modal Small Molecule Tubulin Polymerization Inhibitor

- Multiple modes of BNC105 anti-cancer action have been identified:
  - Tumour starvation by selective disruption of tumour vasculature
  - Induction of cancer cell death by upregulation of pro-apoptotic proteins
  - Suppression of tumour growth by inhibition of cancer cell proliferation
  - Modulation of the tumour microenvironment
  - Tumour immunomodulation with a significant reduction in PD-L1 expression

- BNC105 clinical dose and schedule have been established in four Phase 1 and 2 clinical trials
- BNC105 has been generally well tolerated in clinical trials in patients with solid tumours (including renal cell cancer, ovarian cancer, colorectal cancer and mesothelioma) and liquid tumours (chronic lymphocytic leukemia) (including in combination with other chemotherapeutics)

Two externally-funded investigator-initiated clinical trials are in progress:

- **Microsatellite stable refractory colorectal cancer:**
  - Phase 2 trial of BNC105 in combination with nivolumab (Opdivo)
  - The trial is sponsored by the Australasian Gastro-Intestinal Trials Group (AGITG) and funding support is provided by BMS

- **Chronic lymphocytic leukemia:**
  - Phase 1 trial of BNC105 in combination with ibrutinib (Imbruvica)
  - Funding support is provided by the Leukemia & Lymphoma Society (US)
# BNC105 Clinical Development Summary

<table>
<thead>
<tr>
<th>Study ID</th>
<th>Indication</th>
<th>Design</th>
<th>Intervention</th>
<th>#Subjects Dosed with BNC105P (Doses)</th>
<th>Key Objectives</th>
<th>Location</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNC105P.001</td>
<td>Advance Stage Solid Tumours</td>
<td>Ph 1; Dose escalation</td>
<td>BNC105P monotherapy</td>
<td>21 (2.1-18.9 mg/m²)</td>
<td>MTD; PK</td>
<td>Australia</td>
<td>Complete</td>
</tr>
<tr>
<td>B2P2M2</td>
<td>Advanced Malignant Pleural Mesothelioma</td>
<td>Ph 2; Single arm</td>
<td>BNC105P monotherapy</td>
<td>30 (16 mg/m²)</td>
<td>PFS; Response Rate</td>
<td>Australia</td>
<td>Complete</td>
</tr>
<tr>
<td>ANZGOG-1103</td>
<td>Partially Platinum Sensitive Relapsed Ovarian Cancer</td>
<td>Ph 1; Dose escalation</td>
<td>BNC105P + carboplatin/gemcitabine (with sequential BNC105P monotherapy)</td>
<td>15 (12-16 mg/m²)</td>
<td>RP2D; PFS; Response Rate</td>
<td>Australia NZ USA</td>
<td>Complete</td>
</tr>
<tr>
<td>GU09-145</td>
<td>Metastatic Clear Cell Renal Cell Cancer</td>
<td>Ph 1/2; Randomized two arm</td>
<td>BNC105P + everolimus vs everolimus monotherapy (with sequential BNC105P monotherapy)</td>
<td>113 (4.2-16 mg/m²)</td>
<td>MTD &amp; RP2D; 6-month PFS; Response Rate</td>
<td>USA Australia Singapore</td>
<td>Complete</td>
</tr>
<tr>
<td>CA209-99U</td>
<td>Microsatellite Stable Refractory Colorectal Cancer</td>
<td>Ph 2</td>
<td>BNC105P + nivolumab</td>
<td>(16 mg/m²)</td>
<td>PFS; Response Rate</td>
<td>Australia</td>
<td>In progress</td>
</tr>
<tr>
<td>D14234</td>
<td>Relapsed/Refractory Chronic Lymphocytic Leukemia</td>
<td>Ph 1; Dose escalation + expansion</td>
<td>BNC105P+ ibrutinib</td>
<td>(8-16 mg/m²)</td>
<td>MTD; EFS; Response Rate</td>
<td>USA</td>
<td>In progress</td>
</tr>
</tbody>
</table>

EFS = event-free survival; MTD = maximum tolerated dose; PFS = progression-free survival; PK = pharmacokinetics; RP2D = recommended Phase 2 dose
LGR5 is a cancer stem cell receptor overexpressed in a number of solid cancers such as colorectal, pancreatic, breast and lung cancers, and has a role in tumour growth and survival.

BNC101 binds to LGR5 with high affinity and selectivity and internalizes the receptor.

BNC101 clinical dose and schedule were established in a Phase 1 trial in patients with metastatic colorectal cancer (CRC) - the recommended Phase 2 dose (RP2D) was identified.

BNC101 was safe and well tolerated with no dose-limiting toxicities (DLTs).

Co-localization of BNC101 and LGR5 was demonstrated in patient tumour tissue.

A cGMP manufacturing process is established at Lonza (UK).

Future development:

- Phase 2 ready: BNC101 in combination with standard of care treatment for gastro-intestinal cancers overexpressing LGR5.
- BNC101 has the potential to be developed as an Antibody-Drug-Conjugate (ADC) therapeutic or in combination with CAR-T therapy.