Bionomics

AN UPDATE FOR OUR SHAREHOLDERS

BIONOMICS NOW

INSIDE THIS ISSUE

BNC105 - BIOMARKERS STRATEGY
BIONOMICS HALF YEARLY RESULTS
BNC101 IN THE SPOTLIGHT
BIOPHARMA AWARDS RECOGNITION

APRIL 2014

BIOMARKERS DRIVE THE BNC105 STRATEGY

Shareholders and staff have been eagerly awaiting an update on BNC105 and Bionomics was able to deliver encouraging results from the Phase I and II trials in ovarian cancer and renal cancer respectively in the first months of 2014. We are also making substantial progress on our other programs, underlining the strength and depth of the Bionomics pipeline.

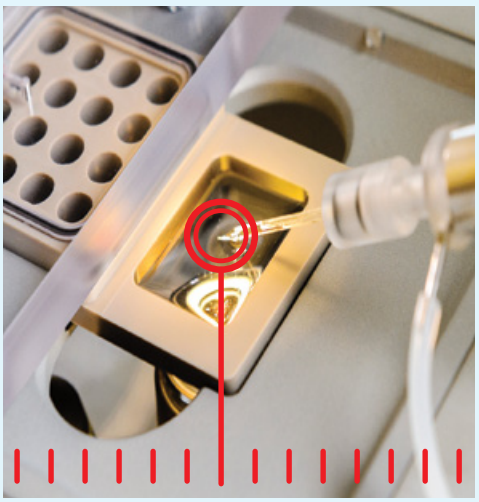
Key outcomes from the Phase II renal cancer trial

The Phase II renal cancer trial was ground-breaking in identifying biomarkers that allow identification of patients most likely to substantially benefit from BNC105. It is important to understand that plasma biomarkers were a key part of the Phase II trial design – they were a pre-specified endpoint identified by Bionomics prior to the commencement of the trial. Importantly, the identification of biomarkers (see "What is a Biomarker? opposite) that strongly correlate with Progression Free Survival (PFS) and PFS at six months from commencement of treatment in this trial have provided the foundation for a Phase II/III trial in renal cancer where they will be used to select who should participate in the trial.

Regarding the biomarkers identified that are strongly correlated with PFS at six months, Bionomics Chief Medical Officer Dr José Iglesias commented: **"The association of significant biomarker changes with an important parameter of disease control such as progression-free-survival is to the best of our knowledge demonstrated for the first time with this study in renal cell carcinoma patients and can be described as trendsetting.... BNC105 has the potential to change the way renal cancer is treated."**

Importantly for the design of the next trial (and also for our partnering strategy), we saw beneficial outcomes in sub-group analyses. Analysis of patient subgroups saw a trend for patients with liver metastases gain an increased benefit from the use of BNC105, with median PFS of 6.6 months versus 2.8 months for those in the Afinitor-only arm.

Patients with a previous nephrectomy (kidney removal) also showed a trend to improved PFS with the BNC105 + Afinitor combination showing median PFS at 7.1 months versus 4.1 months. This trend was also seen in patients with higher Furhman Grade (high Furhman grades are associated with poor survival prospects). For example in patients with Furhman Grade 2 histological differentiation grade with the BNC105 + Afinitor arm achieving 6.4 months median PFS versus median PFS of 4.1 months in the Afinitor-only arm.



WHAT IS A BIOMARKER?

A biomarker is typically a protein in blood that is objectively measured and may indicate abnormal biological processes, pathogenic processes or pharmacological responses to a therapeutic. They are the measures that assist clinical assessment such as blood pressure or cholesterol, and are used to predict health states in individuals or across populations to help determine optimum treatment.

Biomarkers can be used to predict patient responses to cancer treatment. An example of this is Roche's blockbuster anti-cancer drug product Herceptin®, which is only recommended for patients with the HER2 biomarker – while this is a subgroup of only 20% to 25% of breast cancer sufferers, Herceptin is a blockbuster drug.

Biomarkers can also be used to monitor response to cancer treatment. For example the CA125 biomarker is used to track treatment response in patients with ovarian cancer.

BIOMAKERS DRIVE THE BNC105 STRATEGY CONT...

The value of the biomarkers and sub-group data from Phase II renal cancer trial is that we will be able to much more precisely target the application of BNC105 in the next trial.

It is also key to our partnering strategy. Biomarker strategies have become an important consideration in the design of clinical trials of new cancer drugs in recent years – for pharmaceutical companies, regulators and payers.

For example Dr Stuart Lutzker VP, BioOncology Exploratory Clinical Development at Genentech, one of the world's largest biopharmaceutical companies, has said

"Today, all of Genentech's investigational cancer medicines entering Phase I have a biomarker strategy to their development."

www.gene.com/stories/evolving-phase-i-a-search-for-better-signals

Bionomics held an open webcast and conference call to discuss the BNC105 results and allow for what resulted in a thorough Q&A session. Over 100 fund managers, shareholders, analysts, journalists and industry professionals participated mostly from the US and Australia.

139 patients were recruited at 77 centres in the US, Australia and Singapore to take part in the randomised Phase II trial testing the combination of BNC105 and everolimus (Afinitor, Novartis) to treat advanced renal cell carcinoma. These patients had all failed the standard Tyrosine Kinase Inhibitor or TKI therapy.

The trial was the first to combine an mTOR inhibitor with a vascular disrupting agent. Patients were randomised into one of two treatment arms, one receiving Afinitor alone and the other receiving Afinitor as well as BNC105.

PHASE I OVARIAN CANCER TRIAL COMPLETED

As announced on 3 February, the Phase I ovarian cancer trial achieved a high positive response rate in 10 out of 15 patients according to the RECIST 1.1 (based on the gold standard imaging technology for measuring tumour size) and/or GCIG CA125 criteria.

In line with the trial's primary endpoint 12mg/m² was identified as the recommended BNC105 dose for Phase II trials of this combination. Biomarker analyses showed this dose induced a response indicative of BNC105 activity. The same biomarkers were witnessed in previous BNC105 trials and have been discussed in the context of the renal cancer trial (see story on page 1+2).

HIGH POSITIVE RESULTS FOR WOMEN FROM PHASE I OF BNC105

One woman in the trial completed 12 cycles of the protocol-prescribed treatment with six cycles of combination therapy and six cycles of BNC105 monotherapy and has continued with BNC105 monotherapy since.

"Both sets of results provide a solid platform to advance BNC105 into the next stages of clinical trials and have added value for potential license arrangements," commented CEO Dr Deborah Rathjen.

BNC105 INDUCES DEATH OF LEUKEMIA CELLS

BNC105 targets a range of solid tumours and has the potential to become a mainstream combination cancer therapeutic.

Studies conducted in the laboratory of Dr Alan Eastman, Professor of Pharmacology and Toxicology at The Geisel School of Medicine, Dartmouth College, New Hampshire, USA have indicated a new element to the mechanism of action of BNC105, expanding both its potential as a cancer therapy and its commercial opportunity.

The data gathered by the Eastman lab was presented at a major US cancer conference (AACR) in the poster entitled **The microtubule-disrupting drug BNC105 is a potent inducer of acute apoptosis in CLL.** This poster highlighted the action of BNC105, as being a potent activator of proteins that lead to cancer cell death. This suggests it is an excellent candidate for clinical trials to induce acute cancer cell death in blood cancers, in particular chronic lymphocytic leukemia (CLL).

Coupled with robust and broad IP protection, this latest data builds further on BNC105's strong value proposition.

BIONOMICS' HALF YEAR RESULTS HIGHLIGHT STRONG FINANCIAL POSITION

On 18 February 2014, Bionomics released its half-yearly report for the six months ended 31 December 2013. Key financial information from this report included:

- Cash at the end of the period of $20,471,279;
- Cash inflows during the six months included $7,004,342 of R&D Tax Incentive for the year ended 30 June 2013; and
- Operating loss after tax for the six months ended 31 December 2013 of $6,836,619.

The financial results are in line with expectations, with the closing cash balance available to enable Bionomics to continue with executing the business strategy of progressing key assets in development and building momentum in licensing activities. These results reflect Bionomics' continued investment in its core research and development programs.

BNC101 & MELANOMA COMPOUND DEVELOPED WITH CRC IN THE SPOTLIGHT AT AACR 2014

The depth of Bionomics' cancer medicines pipeline was highlighted delivering three poster presentations at the 105th Annual American Association for Cancer Research (AACR) meeting in April. The meeting is attended by representatives from major pharmaceutical companies and academia, patient advocates and other cancer professionals worldwide, making it the premier cancer research event on the calendar.

Bionomics' Vice President of US Operations and Cancer Biology Dr Peter Chu presented **Targeting colorectal and pancreatic cancer stem cells with the LGR5 monoclonal antibody BNC101**. LGR5 is a validated cancer stem cell receptor associated with most solid tumours including colorectal and pancreatic cancer. Bionomics' cancer stem cell antibody BNC101 specifically targets LGR5 and new preclinical data demonstrates that the antibody is active in models of pancreatic cancer and triple-negative breast cancer. It has also shown effectiveness when combined with standard of care chemotherapy treatments in pancreatic cancer.

Annabell Leske, Research Associate for Drug Development, delivered the poster **BL-011256 is a novel VEGFR3 selective inhibitor, which suppresses tumour lymphatics and lymph node metastasis in an animal model of melanoma.** The mechanism of action of BL-011256 operates through the inhibition of a key receptor which controls the formation of tumour lymphatic vessels which in turn serve as conduits for cancer to spread to lymph nodes.

MERCK & CO AND BIONOMICS CO-SPONSOR ADELAIDE PAIN SYMPOSIUM

After last year's much-reported announcement of a partnership to discover and develop small molecule drug candidates targeting pain, Merck & Co and Bionomics co-sponsored a special pain symposium event in November at the BioSA Conference Centre in Adelaide.

The meeting included renowned speakers from the field of pain research and focused on the clinical aspects of pain, novel targets for pain therapeutics and the overall pain landscape in Australia. Speakers on the day included CEO of Painaustralia Lesley Brydon, Former VP of Neuroscience for Merck & Co and current Bionomics' Scientific Advisory Board member Dr Richard Hargreaves, Dr Joseph Duffy of Merck & Co and a number of academics specialising in pain from universities across Australia.

Feedback received has been overwhelmingly positive and Bionomics is planning to host similar events relevant to its varied pipeline moving forward.

MANAGING THE EXECUTION RISK: THE BIONOMICS BUSINESS MODEL

DRUG DISCOVERY

- Engine room delivering flow of new drug candidates
- Build pipeline with multiple shots on goal to manage risk

DRUG DEVELOPMENT

- Adding value through targeted clinical trials

PARTNERING

- Lay off risk with experienced partners
- Generate revenue streams to support discovery programs

BIONOMICS RECOGNISED AT BIOPHARMA ASIA INDUSTRY AWARDS

During March, Bionomics was named Innovative Asian Biotech of the Year at the BioPharma Asia Industry Awards in Singapore.

Conducted as part of Asia's largest biopharmaceutical event BioPharma Asia Convention, the award highlighted Bionomics' ability to adopt innovative technologies to develop novel drugs. It also acknowledged the Company's approach to drug development such as the implementation of new processes, technologies or applications that achieve quantifiable and sustainable results.

Bionomics' pipeline has a depth and diversity which sets the Company apart from many of its peers. The"engine room" technologies of the Company deliver a stream of drug candidates to feed our strategic partnering business model.

PLATFORM TECHNOLOGIES DELIVER MULTI-PRODUCT PIPELINE, LEVERGING CORE STRENGTHS

THEARPEUTIC AREA	DRUG CANDIDATE / PROGRAM	DISCOVERY	PRECLINICAL	PHASE I	PHASE II	LICENSEE / PARTNER
CANCER	**BNC105** SOLID TUMOURS, RENAL, OVARIAN, MESOTHELIOMA				★	
	BNC101 CANCER STEM CELLS, SOLID TUMOURS, COLON, BREAST, PANCREATIC					
	BNC102 CANCER STEM CELLS, SOLID TUMOURS					
	VEGRF3 SOLID TUMOURS, MELANOMA, BREAST					Cancer Therapeutics CRC
	RET LUNG & THYROID CANCERS					Cancer Therapeutics CRC; Walter+Eliza Hall Institute of Medical Research
CENTRAL NERVOUS SYSTEM	**BNC210 (IW-2143)** ANXIETY/DEPRESSION					Ironwood
	BNC375 COGNITIVE IMPAIRMENT, ALZHEIMER'S DISEASE, PARKINSON'S, ADHD, SCHIZOPHRENIA			★		
	GABA-A EPILEPSY					
	UNDISCLOSED PAIN					MERCK & CO., INC.
IMMUNE DISEASE	**BNC164** PSORIASIS, MULTIPLE SCLEROSIS, RHEUMATOID ARTHRITIS			★		

★ TARGETED LICENSING POINT

SEE BIONOMICS

30 May – 3 June 2014
ASCO Annual Meeting
Chicago, USA

3 – 5 June 2014
Biotech Invest
Hong Kong, Malaysia

20 June 2014
Australian Life Sciences Investment Showcase
San Francisco, USA

23 – 26 June 2014
BIO International Convention
San Diego, USA

E-NEWSLETTER

Would you like to receive Bionomics Now newsletter in an electronic format?

Email us at investorrelations@bionomics.com.au to receive your Bionomics e-Newsletter and get instant access to all Bionomics website content, video's and links.

CONTACT US

31 Dalgleish Street
Thebarton, SA 5031
Australia
Tel: +61 8 8354 6101

Deborah Rathjen
CEO & Managing Director
drathjen@bionomics.com.au

Bionomics

Factors Affecting Future Performance This publication contains "forward-looking" statements within the meaning of the United States' Private Securities Litigation Reform Act of 1995. Any statements contained in this publication that relate to prospective events or developments, including, without limitation, statements made regarding Bionomics' development candidates BNC105, IW-2143 (BNC210), our acquisition of Eclipse Therapeutics and ability to develop products from their platform, its licensing deal with Ironwood Pharmaceuticals, drug discovery programs and pending patent applications 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 risks related to our available funds or existing funding arrangements, a downturn in our customers' markets, our failure to introduce new products or technologies in a timely manner, Ironwood's decisions to continue or not continue development of IW-2143, regulatory changes, risks related to our international operations, our inability to integrate acquired businesses and technologies into our existing business and to our competitive advantages, as well as other factors. Results of studies performed on competitors products may vary from those reported when tested in different settings. 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 publication.