Bionomics Limited

20 May 2004

Securities and Exchange Commission
Judiciary Plaza,
450 Fifth Street,
Washington DC 20549

SUPPL

Re: Bionomics Limited - File number 82-34682

Please see attached provided pursuant to Section 12g3-2(b) file number 82-34682.

Yours sincerely

Per: Jill Mashado
Company Secretary

PROCESSED
JUL 06 2004
THOMSON FINANCIAL

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82-34682

inSIGHT

Bionomics Limited

The Bionomics' Shareholders Newsletter

May 2004

Dr Deborah Rathjen

Chief Executive Officer and Managing Director

Targeting Anxiety

Our first newsletter put the spotlight on our epilepsy research program which made considerable progress through 2003. In this newsletter the emphasis is still on the molecule being targeted in our epilepsy drug discovery program – but from a new perspective – anxiety.

One of the developments of the past six months has been the extension of Bionomics' proprietary ion channel drug discovery platform ionX® to encompass the discovery of drugs to treat anxiety. An estimated 2 million Australians suffer from an anxiety disorder whilst an estimated 19 million adult Americans suffer from anxiety disorders. In both Australia and the United States, anxiety represents the most common mental illness in the population. The global market for drugs that treat anxiety was estimated at US$14.5 billion in 2003.

EPILEPSY AND ANXIETY – THE IMPORTANT ROLE OF THE GABA RECEPTOR

Bionomics has discovered that changes in an ion channel – the GABAA receptor – which plays a major role in regulating electrical stimulation in the brain is responsible for a common form of epilepsy. In this issue of our newsletter we explain how Bionomics' approach to epilepsy can also be applied to the discovery of new treatments for anxiety through detailed knowledge of the GABAA receptor.

In this issue we also take the opportunity to profile Scientific Advisory Board (SAB) member Dr Errol DeSouza. Dr DeSouza who joined our SAB in early 2003 has had a very successful career in central nervous system (CNS) drug discovery and development in biotech companies such as Neurocrine Biosciences (NASDAQ: NBIX) which he helped found and the major pharmaceutical company Aventis. Access to well credentialed and respected experts in the field of CNS drug discovery and development is a very important resource for Bionomics as it undertakes its epilepsy and anxiety program.

SUCCESSFUL CAPITAL RAISNG TO FAST TRACK EPILEPSY AND ANXIETY DRUG DISCOVERY

Bionomics has now completed a capital raising via a placement and a shareholders' entitlements issue. Approximately $5.8 million net of capital raising costs was raised with the funds to be directed towards the Company's epilepsy and anxiety drug discovery program.

It was pleasing to see some of the Company's top twenty shareholders participating in this placement by taking over 50% of the placement. As a result of the placement we also welcomed three new institutional to Bionomics' share register. We are grateful to all shareholders for their support in the capital raising.

Bionomics recently lodged its Appendix 4C (quarterly cashflow statement) with the ASX for the quarter ended 31 March 2004 showing a cash position of $8.273 million. Additional funds of $1.7 million have been received post 31 March as the recent capital raising was finalised. For the nine months to 31 March 2004 Bionomics' net operating cash burn was $2.19 million compared with $3.77 million for the same period in 2002/03. The reduction in expenditures reflects our continuing commitment to carefully controlling expenditures whilst at the same time moving forward the company's research in order to achieve our business objectives – the commercialisation of Bionomics' substantial scientific achievements.

CONTINUED INSIDE

Drug Discovery at Bionomics

It's an exciting time at Bionomics as we assemble the Drug Discovery machine with the goals of developing medicines to treat anxiety and epilepsy.

Most of us suffer from anxiety at some time in our lives. Unlike the relatively mild, brief anxiety caused by a stressful event such as a business presentation, anxiety disorders are chronic, relentless and can grow progressively worse if not treated. When it persists to the point that it interferes with one's life, it is what health experts call an anxiety disorder — the most common mental illness in Australia. In its various forms, ranging from very specific phobias to generalized anxiety disorder, it afflicts 2 million Australians. Each anxiety disorder has its own distinct features, but they are all bound together by the common theme of excessive, irrational fear and dread.

Effective treatments for some of the anxiety disorders are available. Physicians typically prescribe one of two types of medications. The first is antidepressants—medications originally approved for treatment of depression. However, patients will need to take it for several weeks before symptoms start to fade and some patients become discouraged and stop taking these medications before they've had a chance to work. The second type of medication is a group of medicines called benzodiazepines, which include Diazepam (also known as Valium). These relieve symptoms quickly but have some side effects such as drowsiness. Because people can develop a tolerance to them—and would have to continue increasing the dosage to get the same effect—benzodiazepines are generally prescribed for short periods of time. People who have had problems with drug or alcohol abuse are not usually good candidates for these medications because they may become dependent on them. In certain instances, the symptoms of anxiety can rebound after these medications are stopped. Benzodiazepines are also extremely effective in controlling various forms of epilepsy, but the potential problems associated with benzodiazepines have led some physicians to shy away from using them.

The pharmaceutical industry, including Bionomics, is searching for new ways to treat anxiety disorders and epilepsy. How does diazepam mediate these effects and, if we understood this, could we develop a new generation of drugs that selectively targeted only the desired properties of benzodiazepines? Recent studies using the powerful techniques of molecular biology and genetically modified mice have revealed that it might be possible to develop a new generation of selective drugs with improved profiles to treat anxiety and epilepsy. Bionomics is actively pursuing this area of research and is looking at strategic alliances and partnerships to further enhance internal capabilities.

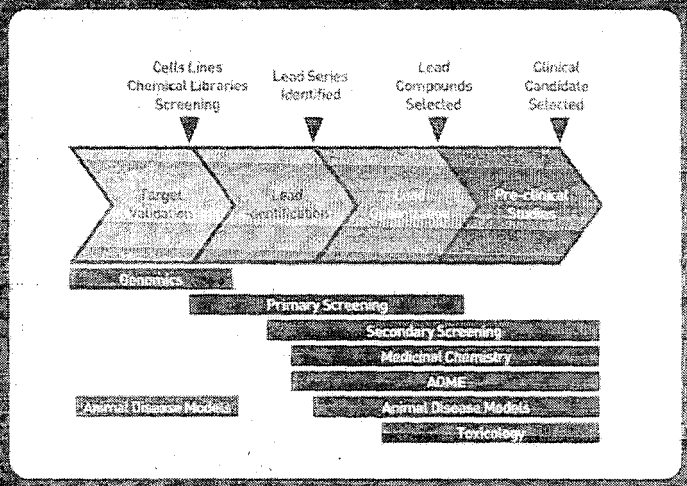
But just how does one go about discovering new medicines?

THE DRUG DISCOVERY PROCESS

Drug discovery and development is a creative, complex and highly regulated process. There are many steps involved in the birth of a drug. It starts with a 'fishing expedition' called high-throughput screening to identify compounds of interest, termed lead compounds. The next phase, lead optimisation, involves chemically modifying these lead compounds to produce new ones with improved drug-like characteristics. Finally, a compound that shows the appropriate properties moves into clinical studies, the next phase of drug development. The optimised compound is administered to healthy volunteers and patients in a controlled clinical setting. Data collected from the various studies are compiled into reports called New Drug Applications (NDA) for review and approval by governmental regulatory agencies. Once the application is approved, the company is allowed to market the drug for the specific indication outlined in the package insert.

THE 'FISHING EXPEDITION' TO GENERATE LEAD COMPOUNDS

In the past, researchers were limited by the number of leads they had access to and the speed that lead compounds could be assessed. With the advent of high-throughput technologies, the number of compounds and speed of assessment has significantly increased. At Bionomics, we are installing a state-of-the-art robotics system which, when coupled with our experience in biology, will be used to implement high-throughput screening to look at many thousands of individual compounds in a single day and identify lead compounds. This is the first step in judging whether the compound is a potentially promising drug candidate. This high-throughput screening platform will be incorporated into our ionX® drug discovery platform, and will allow us to exploit additional ion channel targets associated with epilepsy and other CNS disorders.



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EPILEPSY AND ANXIETY DRUG DISCOVERY COLLABORATIONS WITH THE WALTER AND ELIZA HALL INSTITUTE AND SOUTHERN CROSS UNIVERSITY

Since the capital raising was announced Bionomics has signed a letter of intent with the Walter and Eliza Hall Institute (WEHI) to establish a drug discovery collaboration in the field of ion channels. The aim of the drug discovery collaboration is to identify new lead molecules for the treatment of epilepsy and anxiety. The drug discovery collaboration is focused on Bionomics' GABA receptor intellectual property and animal models of human inherited epilepsy.

We are pleased to be partnering with WEHI because we believe that their chemistry capabilities are amongst the best in the world and we are confident that WEHI's skills will complement our innovative approach to drug discovery. This drug discovery collaboration is an example of the opportunity to bring together the strengths of two Australian biotechnology enterprises to maximize the success of an innovative program.

Bionomics has also established a highly complementary drug discovery collaboration, with Southern Cross University, to discover new drugs targeting epilepsy and anxiety from Australian natural products. Under our collaborative arrangements, Southern Cross University will provide Bionomics with extracts from its collection of Australian-based natural products, together with expertise in natural products chemistry. Bionomics will screen these natural products for activity against biological targets associated with epilepsy and anxiety, and utilize Southern Cross University's natural products library and chemistry expertise to support its drug discovery program. There have been a number of successful outcomes from utilizing natural products to discover new drugs for a range of treatments.

EPILEPSY DIAGNOSTIC TEST DEVELOPMENT – COMMERCIALIZATION AND CLINICAL STUDY UPDATE

As shareholders are aware Bionomics initial focus in epilepsy diagnostic product development is on the development of a test for Severe Myoclonic Epilepsy of Infancy (SMEI). SMEI, one of the severest forms of epilepsy in infancy, is currently difficult to diagnose and may be mistaken for febrile convulsions and other forms of epilepsy. It is also difficult to treat since it is in most cases resistant to existing anti-epileptic drug treatment.

In January we indicated to shareholders that we anticipated the completion of a large clinical study of patients with SMEI in 2004. The clinical study, led by Professor Samuel Berkovic and Associate Professor Ingrid Scheffer, study will be the largest single study of patients with this form of epilepsy undertaken to date and the outcomes will greatly assist the development and marketing of gene-based diagnostic tests for SMEI.

The successful screening of such a large patient cohort in a single centre study would represent an important milestone. The results are aimed at providing a quantitative link between severe myoclonic epilepsy and mutations in an ion channel gene known as SCN1A. Through this study we will be able to ascertain, with a certainty previously unavailable, the risk of developing SMEI in patients presenting with childhood epilepsy. This study has progressed well and has attracted a great deal of interest from potential commercial partners.

Translation of key clinical and genetic data into tangible patient benefits is an important driver for our diagnostic product development program. It is anticipated that the SMEI test will be Bionomics' first diagnostic product to market and its use will be supported by this clinical data.

We have received additional database access fees from our partner Nanogen Inc. since the beginning of 2004 and our sights are set on the further commercialization of our epilepsy intellectual property for diagnostic use.

The diagnosis of different forms of epilepsy using genetic information is a new market opportunity with, unlike the drug market, little available information as to the potential size of the market for an SMEI test. The information we have to date is based on US figures which suggest that in the US approximately 250,000 children under the age of 6 are referred to a physician each year for investigation of seizures which occur when the children have a high temperature. Whilst only a small percentage of children within this group will have epilepsy, the target market and the clinical need associated with this market make it attractive for commercial development.

I look forward to reporting to you in the coming weeks and months on further developments and progress in Bionomics' programs.

Yours sincerely,

Dr Deborah Rathjen

Chief Executive Officer and Managing Director

Dr Errol De Souza
President & CEO
of Archemix Corporation.

Dr Errol De Souza is an internationally recognised leader in central nervous system (CNS) research and development. He is the former President and CEO of leading US biotech company, Synaptic Pharmaceutical Corporation and is currently President and CEO of the US company Archemix Corporation. Prior to these roles, Dr De Souza held senior management positions within Aventis (NYSE:AVE) and its predecessor Hoechst Marion Roussel Pharmaceuticals, Inc. and was a founder of Neurocrine Biosciences Inc (NASDAQ: NBIX), a biopharmaceutical company, now capitalized at over US$2billion, with a focus on CNS drug discovery and development. Most recently, Dr De Souza was Senior Vice President and Site Head, US Drug Innovation and Approval (R&D), at Aventis where he was responsible for the discovery and development of drug candidates through Phase IIa clinical trials for CNS and inflammatory disorders. Dr De Souza is also currently an Adjunct Professor at the Centre for Molecular and Behavioral Neuroscience at Rutgers University in New Jersey and has served on multiple Editorial Boards, NIH Committees as well as on the Board of Directors of several companies.

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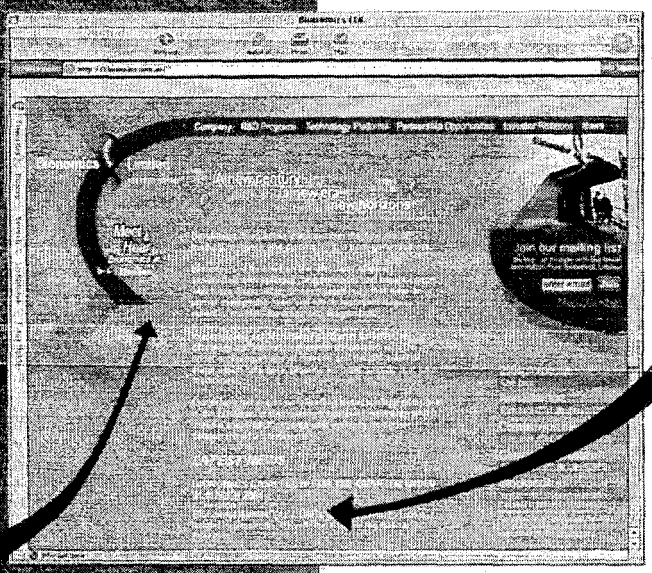

Read about Bionomics Limited lodging its Appendix 4C for the quarter ended 31 March 2004 by following the links.

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