Bionomics Limited

29 May 2007

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

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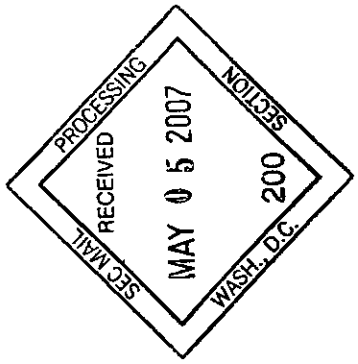

Re: Bionomics Limited - File number 82-34682

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

Yours sincerely

per
Stephen Birrell
CFO & Company Secretary

PROCESSED
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THOMSON
FINANCIAL

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ASX ANNOUNCEMENT

BIONOMICS VALIDATES DRUG CANDIDATE FOR ANXIETY

New drug candidate BNC210 emerges as an effective and safe development prospect

Key points:

- **In preclinical testing, new drug candidate, BNC210, provides potent relief of anxiety with no detectable side effects**
- **BNC210 targets the up to US$12 billion market for anxiety/depression**
- **BNC210 is the second clinical candidate to emerge from Bionomics' discovery efforts within 13 months and is Bionomics' first CNS drug candidate**

29 May 2007, Adelaide: Australian drug discovery company, Bionomics (ASX: BNO), announced today that it has identified a novel compound, BNC210, with highly promising properties as a potential new treatment for psychiatric disorders. Following extensive validation in preclinical models of mental illness, Bionomics has formally nominated BNC210 as a drug candidate. Bionomics will now commence manufacturing scale-up and formal toxicology studies with the objective of filing an Investigational New Drug (IND) application with the US Food and Drug Administration (FDA).

BNC210 has been found to be highly effective across a panel of animal models of clinical anxiety. To-date, it has shown no signs of the common side-effects associated with current treatments for anxiety. Key data summarizing the efficacy of BNC210 is described in the appendix to this announcement.

In addition to anxiety, Bionomics is investigating the potential use of BNC210 for other psychiatric and neurological conditions.

Richard Morgan, formerly of GlaxoWellcome and a Scientific Advisor to Bionomics commented "In preclinical testing, BNC210 was found to be fast-acting, orally bio-available (suitable for formulation as a tablet), and showed signs of increased efficacy when administered over an extended period. While it is a novel compound, BNC210 belongs to a well-established class of drugs which has a long history of safe pharmaceutical use. Its properties appear consistent with once a day use in humans. BNC210 has the potential to fill an important need in the market."

Dr Deborah Rathjen, Chief Executive Officer of Bionomics commented: "Whilst anxiety disorders remain one of the most widespread human conditions the use of current drugs may be accompanied by side-effects including sedation, impaired memory and sexual dysfunction. From a commercial stand-point, I believe BNC210 is an exciting addition to our pipeline, as BNC210 appears to have none of the side effects that plague other drugs in this sector. The world market for drugs to treat anxiety and the related condition of depression is over US$12 billion – one of the largest markets in the pharmaceutical industry. This is why the pharmaceutical industry continues to look for new drugs to treat anxiety. "

BNC210 is the second drug candidate to be developed within the past 13 months using Bionomics' proprietary MultiCore® chemistry technology.

"The selection of BNC210 as a clinical candidate is also further validation of our MultiCore® technology platform as a uniquely powerful technology for drug discovery. Using MultiCore®, Bionomics can rapidly create promising drug candidates. MultiCore® is particularly useful for enhancing the activity of compounds while eliminating concerning side-effects – as we appear to have done in the case of BNC210. We believe that this bodes well for future additions to our pipeline," stated Dr. Rathjen.

With BNC210 now entering an IND enabling development path, Bionomics will in parallel pursue a significant licensing deal that will facilitate its clinical development.

FOR FURTHER INFORMATION PLEASE CONTACT:

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About Bionomics Limited

Bionomics (ASX: BNO) discovers and develops innovative therapeutics for cancer and diseases of the central nervous system. Bionomics has small molecule product development programs in the areas of cancer, anxiety, epilepsy and multiple sclerosis. Bionomics' most advanced program, BNC105 for the treatment of cancer, is based upon the identification of a novel compound that potently and selectively restricts blood flow within tumours. Bionomics' discovery and development activities are driven by its three technology platforms: Angene®, the company's angiogenesis target and drug discovery platform, incorporates a variety of genomics tools to identify and validate novel angiogenesis targets. MultiCore® is Bionomics' proprietary, diversity orientated chemistry platform for the discovery of small molecule drugs. ionX® is a set of novel technologies for the identification of drugs targeting ion channels for diseases of the central nervous system. Bionomics was recently ranked in the top 10 in the Deloitte's Technology Fast 50 Australian technology companies.

For more information about Bionomics, visit **www.bionomics.com.au**

About BNC210

Bionomics discovered BNC210 by applying its patented MultiCore® technology platform beginning from a starting point in the scientific literature. BNC210 is a novel compound that has potent anxiety relieving activity at doses as low as 0.1mg/kg in rodents. It causes no indication of sedation or other side-effects at doses up to 100 mg/kg, realising a therapeutic index of approximately 1000. BNC210 is readily absorbed and has excellent oral bioavailability. Safety assessment to-date suggests that BNC210 is safe and well tolerated. Bionomics has filed a US provisional patent describing the structure of BNC210, other related compounds and their use in the treatment of anxiety disorders and other related conditions.

About Anxiety

Anxiety is a common debilitating condition that affects 19 million patients in the US alone, and has an estimated market value $5-$12 billion worldwide. Anxiety sufferers typically include those with panic disorder, phobias, obsessive compulsive disorders and post traumatic stress disorder. Many of the largest blockbuster drugs are for treating anxiety including Valium, Prozac, Buspar and Zoloft. Current anxiety therapeutics are not ideal and have a range of side effects.

Appendix – BNC210 data

BNC210 has been subjected to extensive efficacy and safety testing.

Three rodent models of anxiety were used in our evaluation of the anxiolytic (anxiety relieving) properties of BNC210. They were the Light Dark Box (mice), the Elevated Plus Maze (rats) and the Marble Burying Test (mice).

Three rodent models of the side effects of anxiolytic drugs - sedation, loss of coordination and loss of memory - were used to test for side effects. They were the Open Field Test, Rotarod and the Place Preference Test.

In these tests Diazepam (Valium) has a potent sedative effect which increases its observed apparent anxiolytic effect.

No significant side effects associated with BNC210 administration were found in any of the studies. Further, the results of a 14 day repeat dose study indicated increased efficacy with no apparent side-effects. In addition, a single dose acute toxicology study and 7 day repeat dose toxicology study was performed at an external laboratory. As assessed by clinical signs, gross pathology, blood chemistry and haematological analysis BNC210 was safe and well tolerated.

An explanation of each model and the corresponding performance of BNC210 in these models is outlined below.

Marble Burying Test – Mice

The Marble Burying test is used as a model for both anxiety and obsessive compulsive disorders. Mice have a natural tendency to bury marbles under the bedding when placed in a cage with rows of evenly spaced marbles on the floor. Suppression of this spontaneous burying has been used as a measure of anxiolytic drug action. Mice pre-treated with benzodiazepines and different classes of antidepressants bury less marbles compared to the control mice (Figure 1).

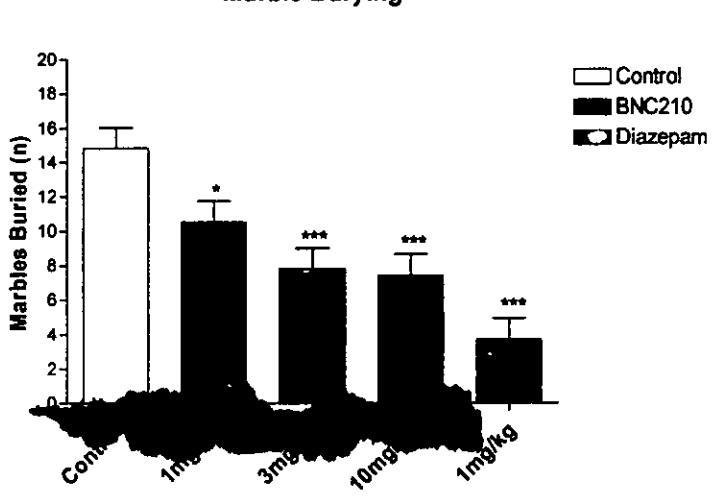

Figure 1: BNC210 had a significant effect on marble burying behaviour in mice, reducing their innate tendency for marble burying by more than 50% at a dose of 10mg/kg and a clear dose response was seen in the dose range used in the experiment. Data represent mean ± SEM. n=10 mice, *p=<0.05, ***p<0.001 (Fishers Protected Least Significant Difference test).

BNC210 is a Potent Anxiolytic in the Mouse Light Dark Test

The light/dark test is an industry-standard rodent model of anxiety. The light dark paradigm is based on a conflict between the innate aversion in mice to brightly illuminated areas and their spontaneous exploratory activity. If given a choice between a large brightly lit compartment versus

a small dark compartment, mice spontaneously prefer the dark. Anxiolytic compounds such as diazepam (Valium) have been found to increase the total duration of time spent in the lit area. Anxiogenic (anxiety enhancing) compounds are observed to work in the opposite way (Figure 2).

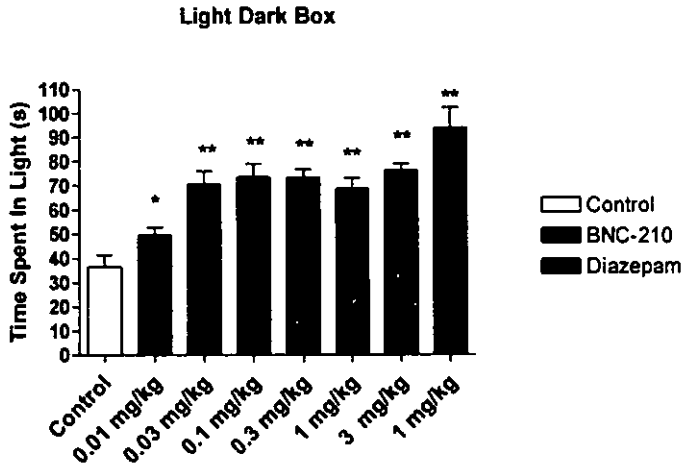

Figure 2: BNC210 gave an outstanding performance in the Light Dark Box by significantly increasing the amount of time that mice spent in the brightly lit chamber at doses as low as 0.01mg/kg .Data represent mean ± SEM. n=10 mice, *p=<0.05, **p<0.01 (Fishers Protected Least Significant Difference test).

BNC210 is a Potent Anxiolytic in the Rat Elevated Plus Maze

The elevated plus maze (EPM) is a well validated model used to evaluate the relative anxiety status of mice and rats. It is based on the conflict between the innate tendencies of rodents to explore novel environments versus their tendency to avoid open, brightly lit areas and to be afraid of heights. "Anxious" mice or rats will make very few entries and spend little time in the open arms of the maze while anxiolytic drugs such as benzodiazepines increase the time spent and number of entries into the open arms. BNC210 had an anxiolytic effect in this model in both mice and rats. The rat data is shown in Figure 3.

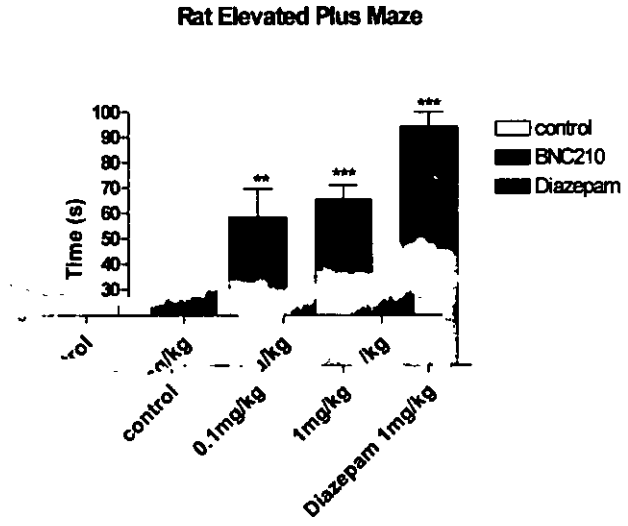

Figure 3: BNC210 had a potent anxiolytic effect when examined in the Rat Elevated Plus Maze. The minimum effective dose in this model was 0.1mg/ kg. This result showed that the anxiolytic properties of our compound had been demonstrated in 3 models of anxiety and in 2 species Data represent mean ± SEM. n=10 rats, **p=<0.01, ***p<0.001 (Fishers Protected Least Significant Difference test).

BNC210 Is Not Sedating In the Mouse Open Field (dark) Test

The open field (dark) test is used to measure the spontaneous motor activity of mice in a quiet, dark environment. This system is good at discriminating the effects of sedating or stimulating test compounds on spontaneous locomotion and can thus provide a preliminary indication of a drug's potentially adverse effects. (Figure 4).

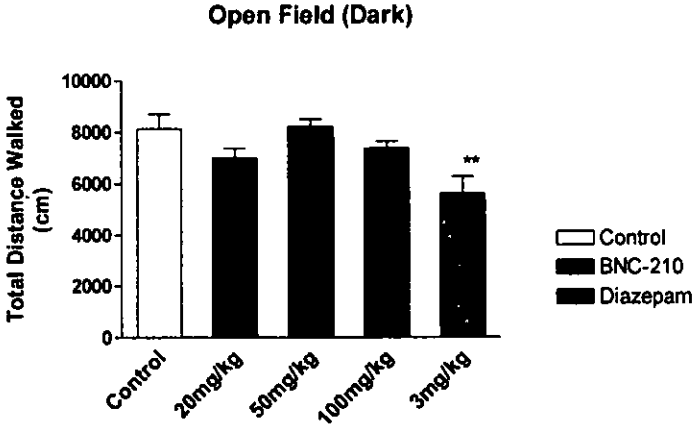

Figure 4: BNC210 was studied in the Open Field (dark) paradigm at 20, 50 and 100mg/kg. It did not show any sign of sedation as evidenced by the lack of effect on spontaneous locomotor activity, even at these high concentrations. The sedative side effect of diazepam is clearly observed at a dose of 3mg/kg. This result, in combination with the anxiolytic effect of BNC210 in three different murine models of anxiety, indicates that our compound has a huge therapeutic window in the 1,000 to 10,000 range. Data represent mean ± SEM. n=10 mice, **p=<0.01 (Fishers Protected Least Significant Difference test).

BNC210 Does Not Cause Sedation or Impair Motor Coordination in Mice on the Rotarod

The Rotarod is used to assess the effect of drugs on motor coordination and sedation in mice and rats. The animals are placed on a rotating rod and the speed of rotation is gradually increased. The rodent's ability to remain on the rotating rod is recorded. Sedative compounds such as benzodiazepines, barbiturates and anti-psychotics reduce performance in this test.

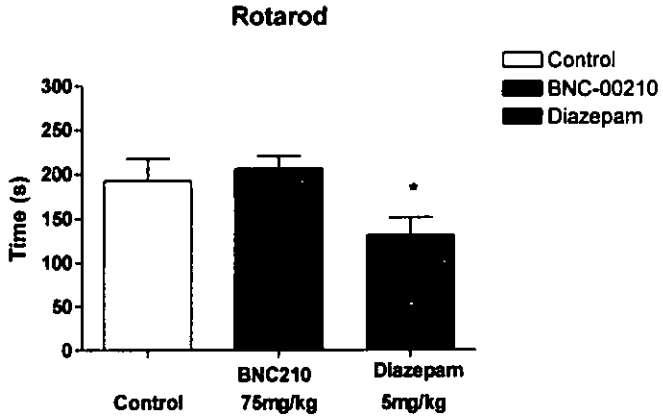

Figure 5: There was no difference in the length of time that control mice and mice treated with 75mg/kg of BNC210, could stay on the rotarod. In contrast, 5mg/kg of diazepam reduced the ability of mice to stay on the rotating rod by almost 50% (n=10 mice). This result confirmed the finding that BNC210 has a huge therapeutic window between doses that provide an anxiolytic effect and doses which produce sedation or impair motor function. Data represent mean ± SEM. n=10 mice, *p=<0.05 (Fishers Protected Least Significant Difference test).

BNC210 Does Not Impair Memory in the Rat Object Recognition Test

Memory impairment is one of the side effects produced by many of the anxiolytic and antidepressant drugs on the market. The Object Recognition task is based on the natural tendency of rats to preferentially explore a novel versus a familiar object, which requires memory of the familiar object. The recognition index is measured as tB(tA=tB)*100 where A is the familiar object, B is the novel object and t is the time spent exploring the object. Rats dosed with Scopolamine, an anti-cholinergic drug with amnesic properties, have a significantly lower recognition index than control animals, while the recognition index for rats treated with BNC210 did not differ from control animals, indicating that BNC210 does not affect short term memory (Figure 6).

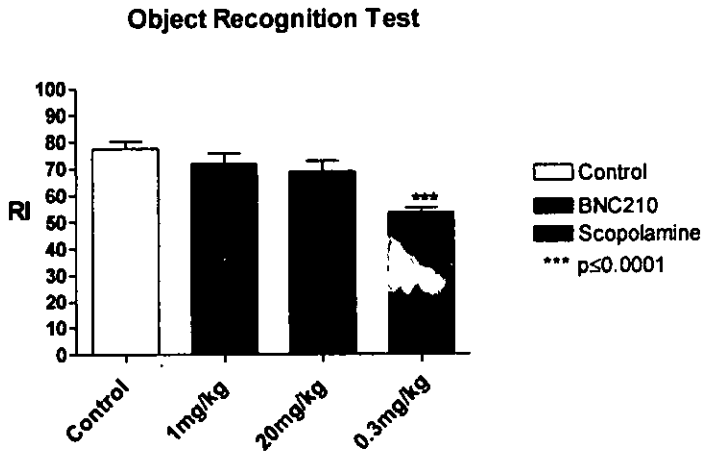

Figure 6: BNC210 does not affect short term memory in rats at doses 200-2000 times larger than those required for its anxiolytic effect. Data represent mean ± SEM. n=10 rats, ***p<0.001 (Fishers Protected Least Significant Difference test).

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 press release that relate to prospective events or developments, including, without limitation, statements made regarding BNC105 and its' drug development programs 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 further downturn in our customers' markets, our failure to introduce new products or technologies in a timely manner, 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. 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 announcement.

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