Prana's PBT2 - Directly Restores Neurons Critical to Cognition

PLoS ONE publication on PBT2 consolidates the underlying mechanisms for the preclinical and clinical benefits of PBT2 in Alzheimer's Disease

Melbourne – 21 March, 2010: Prana Biotechnology (NASDAQ:PRAN; ASX:PBT) today announced the publication of new data on the ability of PBT2 to repair the damage in an Alzheimer's affected brain thereby facilitating the restoration of cognition in Alzheimer's Disease (AD). The findings help to explain the rapid improvement in cognition previously reported in transgenic Alzheimer's mice* and in patients in a Phase IIa clinical trial with PBT2**. The article published in the science journal PLoS ONE is entitled "Metal Ionophore Treatment Restores Dendritic Spine Density and Synaptic Protein Levels in a Mouse Model of Alzheimer's Disease".

The authors led by Dr Paul Adlard, Head of The Synaptic Neurobiology Laboratory at The Mental Health Research Institute, describe the biochemical and anatomical changes occurring in the brains of transgenic*** Alzheimer's mice treated with PBT2.

After 11 days of treatment, the brains of the Alzheimer's mice showed a statistically significant increase in the numbers of spines on the branches (or dendrites) of neurons in the hippocampus, a memory centre specifically affected in AD. Increasing the number of spines is important as this permits many more neurons to interconnect with any particular neuron thereby increasing the brain's capacity to carry out learning and memory functions.

Importantly, these anatomical changes to the hippocampus were also accompanied by increased levels in key proteins**** involved in learning, memory and neuronal growth. The levels of many of these proteins were restored to the levels seen in healthy, cognitively normal animals.

"The ability of PBT2 to promote the forming and reforming of connections between neurons is fundamental to the repair of brain tissue damaged by AD, and the expression of key neuronal receptors and signaling proteins indicates that the repaired tissue is functional" noted Prana's Head of Research, Associate Professor Robert Cherny.

In a series of parallel experiments, the authors also administered PBT2 to cultured neurons. In these *in vitro* experiments, PBT2 was able to elicit elongation of 'arm like' projections from the immature developing neurons called neurites. These projections can ultimately mature into either axons or dendrites of an adult neuron. Significantly, the changes observed in the *in vitro* experiments were strictly dependent on the presence of copper or zinc in the growth medium, confirming that the restorative effect of PBT2 is due to its ability to deliver these metals to deficient neurons.

It has previously been shown that PBT2 neutralises the toxicity of the Alzheimer's Abeta protein by preventing the formation of toxic aggregates or oligomers*. These new results further explain how PBT2 can achieve such rapid improvements in cognition: by liberating copper and zinc trapped in amyloid deposits and returning those essential metals to neurons, where they are needed for normal function.

"These findings further demonstrate the unique combination of detoxification and neuronal restoration provided by PBT2 that underlie cognitive improvement in the clinic," concluded Dr Cherny.

* Adlard *et al.* Neuron (2008) vol. 59, pp. 43-55
**Lannfelt *et al.* Lancet Neurology (2008) vol. 7, pp. 779-86; Lannfelt *et al.* Lancet Neurology (2009) vol. 8, pp. 981.
*** The AD transgenic mouse model is the Tg2576
**** These proteins include different subtypes of NMDA receptors, which are known to be depleted in AD, the signaling protein CamKII, and TrkB, and the receptor for Brain Derived Neurotrophic Factor.

About Prana Biotechnology Limited
Prana Biotechnology was established to commercialize research into age-related neurodegenerative disorders. The Company was incorporated in 1997 and listed on the Australian Securities Exchange in March 2000 and listed on NASDAQ in September 2002. Researchers at prominent international institutions including The University of Melbourne, The Mental Health Research Institute (Melbourne) and Massachusetts General Hospital, a teaching hospital of Harvard Medical School, contributed to the discovery of Prana's technology.

For further information please visit the Company's web site at www.pranabio.com.

Forward Looking Statements

This press release contains "forward-looking statements" within the meaning of section 27A of the Securities Act of 1933 and section 21E of the Securities Exchange Act of 1934. The Company has tried to identify such forward-looking statements by use of such words as "expects," "intends," "hopes," "anticipates," "believes," "could," "may," "evidences" and "estimates," and other similar expressions, but these words are not the exclusive means of identifying such statements. Such statements include, but are not limited to any statements relating to the Company's drug development program, including, but not limited to the initiation, progress and outcomes of clinical trials of the Company's drug development program, including, but not limited to, PBT2, and any other statements that are not historical facts. Such statements involve risks and uncertainties, including, but not limited to, those risks and uncertainties relating to the difficulties or delays in financing, development, testing, regulatory approval, production and marketing of the Company's drug components, including, but not limited to, PBT2, the ability of the Company to procure additional future sources of financing, unexpected adverse side effects or inadequate therapeutic efficacy of the Company's drug compounds, including, but not limited to, PBT2, that could slow or prevent products coming to market, the uncertainty of patent protection for the Company's intellectual property or trade secrets, including, but not limited to, the intellectual property relating to PBT2, and other risks detailed from time to time in the filings the Company makes with Securities and Exchange Commission including its annual reports on Form 20-F and its reports on Form 6-K. Such statements are based on management's current expectations, but actual results may differ materially due to various factions including those risks and uncertainties mentioned or referred to in this press release. Accordingly, you should not rely on those forward-looking statements as a prediction of actual future results.

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