

Living Cell
Technologies Ltd

SCIENTIFIC ANNOUNCEMENT

**6 May 2004 Providence, Rhode Island USA
Adelaide, South Australia, Australia**

Potential new treatment for stroke and neurodegenerative disease published in *NeuroReport*

LCT BioPharma Inc. in collaboration with scientists at the Medical College of Georgia have discovered a cell-based treatment that greatly decreases the brain damage caused by stroke.



The findings, published in the May issue of *NeuroReport*, present strong evidence that cells from the choroid plexus (a region that supplies nutrients the brain and the spinal cord) are able to supply damaged brain tissue with factors needed for regeneration of the damaged neurons. In an animal model of stroke, the cell transplant not only to lessened damage to the brain, but also improved function much beyond that obtained in the animals that did not receive the transplant.

LCT BioPharma Inc. of Providence, Rhode Island, a subsidiary of the Australian company Living Cell Technologies ('LCT'), provided the choroid plexus cells packaged inside capsules made of a polymer from algae (called alginate) which effectively forms a barrier between the transplanted cells and the immune system of the recipient.

The alginate encapsulation allows the passage of small molecules in and out of the implanted cells while protecting the cells from destruction by larger antibody molecules from the host immune system that could cause rejection of the transplant.

Dr Cesario Borlongan, first author on the study and a neuroscientist at Medical College of Georgia said: "When microcapsules containing these choroid plexus cells were placed on top of the brains in animal models of stroke, the stroke damage was significantly reduced."

"This is the first indication that the choroid plexus may play a major role in the stimulation of damaged cells and/or the secretion of protective factors. This novel therapy appears to harness the healing response of the choroid plexus."

"These results are immensely encouraging and the next step will be to repeat the study in a large animal (primate) model," said Dr Borlongan.

Much work remains to explore the potential for use of this type of therapy in human stroke patients, including the best means of delivery.

"This is essentially a natural process of cell repair that may have potential not only for stroke, but also for other neurodegenerative diseases such as Huntington's, and traumatic brain injury," said Dr Dwaine Emerich, VP of Research for LCT BioPharma.

"Transplanting choroid plexus tissue for stroke may open a whole new understanding of how to treat neurodegenerative diseases. It may also direct us to explore new drug pathways for more effective treatments of diseases of the central nervous system than those currently available."

The findings are published in the May issue of *NeuroReport* and will be presented at the 11th annual meeting of the American Society for Neural Transplantation and Repair, May 6-9 in Clearwater Beach, Fla.



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About LCT

Living Cell Technologies Limited (LCT) was established in 1987 to develop and commercialise cell therapies for the treatment of a wide variety of diseases. The company's headquarters are in Adelaide, South Australia with a research and technology unit in New Zealand, a product development unit in Rhode Island, US and an exclusive alliance with the University of Perugia in Italy for development of the alginate encapsulation technology. LCT is listed on the Newcastle Stock Exchange (NSX:LCT) and will list on the Australian Stock Exchange in mid 2004. LCT's technology has potential application for the treatment of any condition caused by a deficiency of specific cell function. The company has three products under development – NeurotrophinCell for Huntington's and stroke, Fac8Cell for haemophilia and DiabeCell for diabetes.

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