NeuroRepair Validates IP with Lab's Success in New Stroke Therapy

Two recent studies by neuroscientists at the University of California, Irvine, have had startling success with a neuroregenerative therapy tested in rats. The therapy may eventually help restore limb function in people with impaired mobility, long after they have experienced a stroke, traumatic injury, or the onset of neurodegenerative disease, such as Parkinson's. NeuroRepair owns the Intellectual Property relating to the invention and pending patent applications.

San Francisco, CA (PRWEB) February 9, 2010 -- Two recent studies by neuroscientists at the University of California, Irvine, have had startling success with a neuroregenerative therapy tested in rats. The therapy may eventually help restore limb function in people with impaired mobility, long after they have experienced a stroke, traumatic injury, or the onset of neurodegenerative disorders, such as Parkinson's disease.

The results of the studies, announced on January 12 in an online press release in UC Irvine Today, validate the Intellectual Property owned by NeuroRepair, a small San Francisco-based biotech company. NeuroRepair is committed to developing an effective, non-invasive procedure for repair of neurological damage based on a protein called Transforming Growth Factor alpha (TGF alpha). The studies found that nearly total functional repair was effected months after the brain injury was suffered.

Historically, it has generally been thought impossible to reverse brain injury. Only recently have scientists found ways to reduce, or modestly reverse, the effects of brain injury with therapeutics administered within a few hours of injury. This discovery, that an injury may be completely repaired months, or even years after the event, is revolutionary.

"For the first time, TGF alpha has been shown to repair damage long after a stroke. We believe this same therapy will be effective in Parkinson's and a number of other brain injuries and diseases," said James Fallon, professor of psychiatry and human behavior at UCI and senior co-author of the studies. Fallon also serves as chief science officer at NeuroRepair.

"This is an extremely significant finding – that a protein naturally occurring in humans restores motor function in rats following a stroke. The potential for using this therapy in humans is very exciting," said Fallon.

In the studies, scientists discovered that TGF alpha was stimulating neuron growth in the rats' brains one month (roughly a year in human terms) after the induction of a stroke. The protein restored 99 percent of lost movement if administered directly to the brain and 70 percent when given through the nose.

"There is an obvious advantage to being able to deliver a drug to the brain intranasally, without a surgical procedure," said Matthew Klipstein, founder and CEO of NeuroRepair. "The study proves the efficacy of TGF-a and of the non-invasive method of administration. While I caution people not to get their hopes up for a readily available cure this month, or even this year, this is an exciting development."

The studies at UC Irvine were conducted by postdoctoral researcher Magda Guerra-Crespo. The first was published in the journal Neuroscience and the second study appeared in the Journal of Stroke & Cerebrovascular Diseases on January 11. In the first study, scientists demonstrated that TGF alpha administered directly to the brain helps rats with stroke-induced loss of limb function on one side, as is typically seen in

humans.

In the second study, scientists simulated a nasal spray by placing TGF alpha in the rats' noses. The chemical version of the protein was slightly different to make it more stable as it traveled to the brain.

"The results were unexpected and amazing," according to Fallon. "We observed the same regenerative process in the second study as in the first. And while the behavioral improvements weren't exactly the same, they were still impressive."

TGF alpha induces massive proliferation, migration and differentiation (the changing of pluripotent stem cells into replacement cells, such as neurons, of the kind that were lost or damaged) in the damaged adult brain. The degree of proliferation and migration surpasses that of other known growth factor or synthetic molecules. Naturally occurring in humans, TGF alpha plays a critical role in development and tissue formation, from the time just following conception through birth and into old age. While it has been studied for two decades in other organ systems, the UCI studies represent the first time it has been shown to reverse the symptoms of a stroke.

In addition to Guerra-Crespo and professor Fallon, UCI researchers Andres Sistos, Tina Toosky, Ihsan Solaroglu, John Zhang and Peter Bryant worked on the intracranial study.

NeuroRepair, Inc. is a corporation founded and funded by Matthew Klipstein shortly after he suffered a neurological injury in a sports accident in 2000. NeuroRepair owns the Intellectual Property relating to this invention, and has pending patent applications respecting the use of Transforming Growth Factor alpha for treatment of central nervous system disorders and injuries, including stroke, Alzheimer's disease, Parkinson's disease, spinal cord injury, retinal disorders, and brain injury from head trauma.

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