# Synthetic peptide may regenerate brain tissue in stroke victims

June 1 2010

A synthetic version of a naturally occurring peptide promoted the creation of new blood vessels and repaired damaged nerve cells in lab animals, according to researchers at Henry Ford Hospital in Detroit.

"This successful experiment holds promise for treating clot-induced strokes in humans," says study lead author Daniel C. Morris, M.D., senior staff physician in the Department of Emergency Medicine at Henry Ford Hospital. "Neurorestorative therapy is the next frontier in the treatment of stroke."

He will present the findings June 3 at the Annual Meeting of the Society for Academic Emergency Medicine in Phoenix.

Dr. Morris explains that the researchers added the synthetic peptide Thymosin beta 4 to a group of drug treatments - including statins - used for neurorestorative therapy to activate repair mechanisms which mimic cellular changes that occur in the early stages of brain development.

This research follows an earlier study, reported by the same team in March, which found that Thymosin beta 4 improved neurological function after stroke in adult rats by increasing the formation of protective myelin around nerve fibers in brain cells.

These experiments conclude that the peptide repairs and regenerates stroke-injured brain tissue.

The results of the first study also were similar to other research using the peptide to regenerate damaged heart, corneal tissue and wound repair.

In the latest study, adult rats were dosed with Thymosin beta 4 one day after they were subjected to a blockage in the cerebral artery, then given four more doses, once every three days. Rats treated only with saline were used as a control group.

After eight weeks, the Thymosin beta 4 group showed significant overall improvement compared to the control group.

The researchers concluded that the peptide improved blood vessel density as well as promoted a certain type of immature brain cells called oligodendrocyte progenitor cells to differentiate into mature oligodendrocytes, which produces myelin to protect axons in nerve cells.

Provided by Henry Ford Health System

Citation: Synthetic peptide may regenerate brain tissue in stroke victims (2010, June 1) retrieved 4 May 2024 from https://medicalxpress.com/news/2010-06-synthetic-peptide-regenerate-brain-tissue.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.