

Stem cells improve damaged spines in mice

February 5 2009, The Yomiuri Shimbun

A team of researchers at Keio University has succeeded in improving spinal cord damage in mice by transplanting into them neural stem cells produced with human induced pluripotent stem (iPS) cells, they said.

The transplant is the first of its kind in which a therapeutic effect of human iPS cells - which can be transformed into various types of cells - has been confirmed. The results of the study are expected to pave the way for a treatment for people with spinal cord injuries.

Spinal cord injuries often cause motor function loss in victims. It is generally accepted that motor function in the legs and other body parts cannot be recovered once the central nerve in the spinal cord has been cut.

Scientists had previously succeeded in treating spinal cord damage in mice using iPS cells from mice. Transplants of human iPS cells often caused adverse reactions in mice and did not improve their condition.

In the latest study, Keio University Prof. Hideyuki Okano and his research team used mice whose immune reactions they had repressed. The researchers paralyzed the mice's hind legs by injuring their spinal cords and later transplanted neural stem cells produced with human iPS cells into the mice.

Four weeks later, the mice partially recovered from their injuries and were able to walk on their hind legs.

Other mice in the study that had not received the iPS cells were able to only slightly twitch their hind legs and were unable to stand up.

Regenerative medicine is said to be problematic because transplanted cells often become cancerous.

Tumors have yet to be found in the mice from the Keio study seven weeks after the transplant.

"To confirm the safety of the treatment, we need to monitor the mice for more than six months from now to see whether they develop tumors," Okano said. "After that, we'd like to conduct (similar) tests on monkeys as a step toward practical use (of the procedure) on humans."

(c) 2009, The Yomiuri Shimbun.

Visit the Daily Yomiuri Online at www.yomiuri.co.jp/index-e.htm/

Distributed by McClatchy-Tribune Information Services.

Citation: Stem cells improve damaged spines in mice (2009, February 5) retrieved 26 April 2024 from <https://medicalxpress.com/news/2009-02-stem-cells-spines-mice.html>

<p>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.</p>
--