

Zebrafish offer clues to treatments for motor neurone disease

April 29 2009

Tiny zebrafish could hold the key to stem cell treatments for motor neurone disease.

Scientists at the University of Edinburgh have found that these fish are able to produce motor neurones - cells that control all muscle activity such as speaking, walking and breathing in humans - when they repair damage to their spinal cords.

Researchers are now screening small molecules with a view to finding drugs that could kick-start the process of motor neurone regeneration in zebrafish, with a view to translating their findings into treatments for humans.

The discovery could help patients with motor neurone disease, in which the motor neurone cells die and are not replaced. This disease can cause paralysis and severe breathing difficulties and is an ultimately fatal condition for which no cure exists.

Dr Catherina Becker, from the University of Edinburgh's Centre for Neuroregeneration and Euan MacDonald Centre for Motor Neurone Disease Research, said: "Understanding how zebrafish can regenerate large numbers of motor neurones after damage to the [spinal cord](#) and how these motor neurones are produced by natural stem cells could help in finding treatments for [Motor Neurone Disease](#).

"This could take the form of improving methods of generating motor

neurons in the laboratory that could be transplanted or finding drugs which could help patients renew their motor neurone supply."

The tropical zebrafish, which are transparent and around 3 cm long, produce the motor neurons from [progenitor cells](#) found in the spinal cord that are able to turn into certain types of cells.

As well as looking at stimulating the production of motor neurons, scientists are working on ways to ensure that these [cells](#) are able to function by sending messages from the brain to the spine and then on to muscles. The research could also have implications for treating [spinal cord injuries](#) following accidents.

Source: University of Edinburgh

Citation: Zebrafish offer clues to treatments for motor neurone disease (2009, April 29) retrieved 25 December 2022 from

<https://medicalxpress.com/news/2009-04-zebrafish-clues-treatments-motor-neurone.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.