

## Pressemitteilung

Max-Delbrück-Centrum für Molekulare Medizin (MDC) Berlin-Buch

Barbara Bachtler

16.03.2005

<http://idw-online.de/de/news104582>

Forschungsergebnisse, Wissenschaftliche Publikationen  
Biologie, Ernährung / Gesundheit / Pflege, Informationstechnik, Medizin  
überregional

## New Insights into the Development of Nerve Cells of the Spinal Cord

The most important relay center for transmitting sensory perceptions from the body into the brain is the spinal cord in the vertebral column. One zone plays a significant role in this - the dorsal horn in which the nerve cells are found that receive, process, and transmit sensory perceptions. For instance, a touch on the skin can be experienced consciously because neurons of the dorsal horn transmit this sensory perception. The complex closed loops in which these neurons are active are already established during embryonic development. Two different classes of neurons in the dorsal horn of the spinal cord, A and B, can be differentiated during embryonic development. Class A neurons are responsible, among other things, for the transmission of information about the position of the body and the extremities; class B neurons are responsible for sensations of touch, temperature, and pain of the skin. However, to date very little has been known about the factors that steer the development of these different neuron classes. Now, developmental biologists from the Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch, in collaboration with researchers from the European Molecular Biological Laboratory (EMBL) in Heidelberg, have gained new insights into the development of neurons in the dorsal horn of the spinal cord. They were able to show in animal experiments that the transcription factor Olig3 directs the development of class A neurons. The antagonist of Olig3 is the transcription factor Lbx1, which the researchers discovered several years previously and which is important for the development of class B neurons. The research paper of Dr. Thomas Müller, from the laboratory of Prof. Carmen Birchmeier, in collaboration with Dr. Mathias Treier (EMBL) has now been published online in the renowned journal *Genes and Development*\*.

\*The bHLH factor Olig3 coordinates the specification of dorsal neurons in the spinal cord

Thomas Müller<sup>1,3</sup>, Katrin Anlag<sup>2,3</sup>, Hendrik Wildner<sup>1</sup>, Stefan Britsch<sup>1</sup>, Mathias Treier<sup>2\*</sup> and Carmen Birchmeier<sup>1\*</sup>

<sup>1</sup>Max Delbrück Center for Molecular Medicine, Robert-Rössle-Strasse 10, 13122 Berlin, Germany.

<sup>2</sup>European Molecular Biology Laboratory, Meyerhofstrasse 1, 69117 Heidelberg, Germany

<sup>3</sup> authors contributed equally

\*Corresponding authors:

C. B.: Phone: +49 30 9406 2403; Fax +49 30 9406 3765; e-mail: [cbirch@mdc-berlin.de](mailto:cbirch@mdc-berlin.de)

M. T.: Phone: +49-6221-387 428; Fax +49-6221-387 166; e-mail: [treier@embl.de](mailto:treier@embl.de)

Press Office

Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch

Barbara Bachtler

Robert-Rössle-Strasse 10

13125 Berlin

Germany

Phone: 0049/30/94 06 - 38 96

Fax: 0049/30/94 06 - 38 33

e-mail: [presse@mdc-berlin.de](mailto:presse@mdc-berlin.de)

