

# New shortcut to cell growth

June 8 2010

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People have them, cats have them and whales have some, too. Neurons, those interlinked nerve cells that carry sensations including pain, stretch from our spinal cords to the tips of our toes, paws or fins. According to a new study published in the journal *Cell*, scientists from the Harvard Medical School, the University of Montreal and the Dana-Farber Cancer Institute have found a new way by which nerve cells relay information that tell them to grow from millimeters to meters in length.

In other words, the researchers found a new signaling pathway that charts the course for cell progression to allow their growth. The team made an intriguing connection between nerve cells and a receptor called DCC (Deleted in Colorectal [Carcinoma](#)). The discovery means cells perform functions in unimagined ways - challenging previous views on how cells respond to their environment - that could prove beneficial in cell growth following [nerve damage](#) or detrimental in diseases such as cancer.

"We found an alternate way that helps [nerve cells](#) respond quickly and locally," says co-author Philippe P. Roux, a professor of pathology and cell biology and a researcher at the University of Montreal Institute for Research in Immunology and Cancer (IRIC). "This is just the beginning, since our findings suggest that more cellular receptors may function in the same way."

Dr. Roux, who is also Canada Research Chair in Signal Transduction and [Proteomics](#), says the study could potentially open new treatment avenues: "We can envisage manipulating this alternate mechanism to

make cells respond locally to their environment. Our findings mean that scientists must consider a new way that cells organize themselves to perform essential functions."

**More information:** The article, "Transmembrane Receptor DCC Associates with Protein Synthesis Machinery and Regulates Translation," is published in the journal *Cell*

Provided by University of Montreal

Citation: New shortcut to cell growth (2010, June 8) retrieved 2 May 2024 from <https://phys.org/news/2010-06-shortcut-cell-growth.html>

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