

# New protein key for cell proliferation identified

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(PhysOrg.com) -- Researchers at McGill University have identified a protein that plays a key role in cell proliferation and is likely to promote cancer development. The work may lead to the development of new diagnostic tools adjusted for personalized treatments, the researchers said. Their results are published in the journal *Proceedings of the National Academy of Sciences (PNAS)*.

The researchers studied the DHX29, a helicase protein, which is required for translation initiation - a highly regulated early stage of protein synthesis. While studying the effects of depletion of this protein from living cells, the investigators found a significant decrease of cancer [cell proliferation](#) rates. Using tumor xenograft models, the team showed that the lack of the DHX29 protein leads to the formation of much smaller tumours. In other words, absence of this protein markedly diminished cancer cell growth.

"We were surprised to find yet another translation initiation factor that has a profound effect on the proliferation of [cancerous cells](#)," said Dr. Armen Parsyan, a post-doctoral fellow, Department of Biochemistry and Rosalind Morris Goodman Cancer Centre at McGill's Faculty of Medicine. "This is another clear indication of the key role that translation initiation factors play in the etiology and pathogenesis of cancer. It's clear we're on the right direction and must continue on this avenue of research."

"Two decades ago we reported the first translation initiation factor that

promotes tumorigenesis, says Dr. Nahum Sonenberg, lead author of the study. "Since then several other translation initiation factors were documented to cause cancer, but it's still exciting to find novel initiation factors that add to our knowledge of cancer development. Dr. Sonenberg is the winner of the 2008 Gairdner Prize for his discoveries in the areas of protein synthesis in human cells and been named Researcher of the Year for Biomedical and Clinical Research by the Canadian Institutes of Health Research.

The DHX29 protein has been described recently by collaborator Dr. Tatyana Pestova's laboratory at SUNY Downstate Medical Center, NY. The PNAS study builds on Pestova's work and documents the role of DHX29 in [protein synthesis](#) and in cancer development.

The study further expands our understanding of the complex physiology of [cancer](#) and paves the way for improved anticancer treatments.

Provided by McGill University ([news](#) : [web](#))

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