

New research sheds light on how stem cells turn into blood cells

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Researchers funded by the Canadian Cancer Society have discovered how certain messages that are carried within stem cells can trigger those cells to become blood cells. The findings are published online today in *Cell Stem Cell*.

"This finding is exciting because it may provide a new way to make blood from human stem cells that could be used to regenerate the blood system in patients, including those with leukemia or those undergoing cancer treatments that indirectly destroy the immune and blood system," says Dr. Christine Williams, Director of Research Programs at the Canadian Cancer Society Research Institute.

This is the first time researchers have been able to show the importance of one particular cell pathway - known as the noncanonical Wnt pathway - in prompting stem cells to specialize and become blood cells. The pathway appears to organize the stem cells so that they can respond to signals telling them what to turn into.

Dr. Mick Bhatia, who led the study, received a \$750,000 grant from the Canadian Cancer Society for this research. "By directing cell differentiation, this method provides the most efficient way to produce blood cells that we are aware of to date," he says. Dr. Bhatia is director of the McMaster University Stem Cell and Cancer Research Institute.

Stem cells are the building blocks of every organ and tissue in the body. These cells have the remarkable ability to become any type of cell in the

body including bone, muscle and blood cells.

Source: Canadian Cancer Society

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