

## Study: Stem cells have electric abilities

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Johns Hopkins University scientists say they've discovered the presence of functional ion channels in human embryonic stem cells.

The Baltimore researchers say the ion channels act as electrical wires, permitting the ESCs, versatile cells, to conduct and pass along electric currents.

The scientists say they believe if they could selectively block some of the channels in implanted cells derived from stem cells, they might be able to prevent potential tumor development.

"A major concern for human ESC-based therapies is the potential for engineered grafts to go haywire after transplantation and form tumors, for instance, due to contamination by only a few undifferentiated human ESCs," said Ronald Li, an assistant professor of medicine at Johns Hopkins School of Medicine and senior author of the study. "Our discovery of functional ion channels ... provides an important link to the differentiation, or maturation, and cell proliferation, or growth of human ESCs."

Li said because human ESCs can potentially provide an unlimited supply of even highly specialized cells, such as brain and heart cells, for transplantation, they may provide an ultimate solution to limited donor availability.

The research appeared in the Aug. 5 online issue of the journal *Stem Cells*.

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