

Cell Discovery May Bring Science Closer to Diabetes Cure

MONDAY, July 20 -- Robert Preidt

(HealthDay News) -- In early embryonic development, a specific gene plays an important role in directing cells to become part of the pancreas or part of the biliary system, and researchers say this finding could help efforts to find a cure for type 1 diabetes.

Research in mouse embryos found that the Sox17 gene "acts like a toggle or binary switch that sets off a cascade of genetic events," the study's senior investigator, James Wells, a researcher in the developmental biology division at Cincinnati Children's Hospital Medical Center, said in a hospital news release.

"In normal embryonic development, when you have an undecided cell, if Sox17 goes one way, the cell becomes part of the biliary system," Wells explained. "If it goes the other way, the cell becomes part of the pancreas."

The discovery could prove important in guiding embryonic stem cells to become pancreatic beta cells, which scientists believe could be used to treat or cure type 1 diabetes. The disease occurs when insulin-producing beta cells in the pancreas are attacked by the immune system.

"With this study showing that turning one gene on or off in a mouse embryo instructs a cell to become pancreatic or biliary, now we'll see if that same gene, Sox17, can be used to direct an embryonic stem cell to become a biliary cell instead of a pancreatic cell," said Wells, who is also an associate professor of pediatrics at the University of Cincinnati College of Medicine. "This might be used one day to replace a diseased pancreas or bile duct in people."

