

Key gene in kidney development found

October 10 2006

U.S. scientists in Memphis, Tenn., say they've found that a gene called Six2 plays a critical role in the development of human kidneys.

St. Jude Children's Hospital researchers say gene Six2 keeps a population of "parent" stem cells constantly available to produce the differentiated cells that give rise to specialized parts of the organ.

The kidney stem cells are the source of cells triggered by chemical signals to differentiate into nephrons -- the structures in the kidney that cleanse the blood of waste. The nephrons later become attached to tubes that collect the filtered blood as urine and direct it to the bladder.

The St. Jude team showed Six2 works by preventing some precursor cells from responding to those signals, thus ensuring there is a continual source of undifferentiated stem cells available to maintain the growth of the kidney.

"Our work shows that Six2 is critical to preventing the developing kidney from running out of stem cells and collapsing into a mass of underdeveloped tissue," said Guillermo Oliver, a member of the St. Jude Genetics and Tumor Cell Biology Department.

Oliver is senior author of a report on the research that appears in the online issue of The EMBO Journal.

Copyright 2006 by United Press International

Citation: Key gene in kidney development found (2006, October 10) retrieved 20 April 2024 from <https://medicalxpress.com/news/2006-10-key-gene-kidney.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.