

Scientists isolate cancer stem cells

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After years of working toward this goal, scientists at the OU Cancer Institute have found a way to isolate cancer stem cells in tumors so they can target the cells and kill them, keeping cancer from returning.

A research team at the University of Oklahoma led by Courtney Houchen, M.D., and Shrikant Anant, Ph.D., discovered that a particular protein only appears in stem cells. Until now, researchers knew of proteins that appeared in both regular cancer cells and stem cells, but none that just identified a stem cell.

The group has already begun work to use the protein as a target for a new compound that once developed would kill the stem cells and kill the cancer. By targeting the stem cells, scientists and physicians also would be able to stop the cancer from returning.

Houchen and Anant are focusing on adult cancer stem cells because of the major role they play in the start of cancer, the growth of cancer, the spread of cancer and the return of cancer.

Current therapies generally do not target stem cells in tumors. This allows stem cells to wait until after chemotherapy or radiation treatments to begin dividing. Researchers believe these stem cells are often responsible for the return of cancer after treatment. The identification of the stem cell marker enables researchers to develop new therapeutics that can target these cells.

Adult stem cells work as essential building blocks in organs by replenishing dying cells and regenerating damaged tissues.

Researchers expect to have initial testing completed to begin the first phase of clinical trials within 5 years led by Russell Postier, M.D. The compound, if successful in human trials, is expected to be available to the public within 10 years.

Unlike embryonic stem cells, the use of adult stem cells in research and therapy is not controversial because the production of adult stem cells does not require the destruction of an embryo.

Source: University of Oklahoma

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