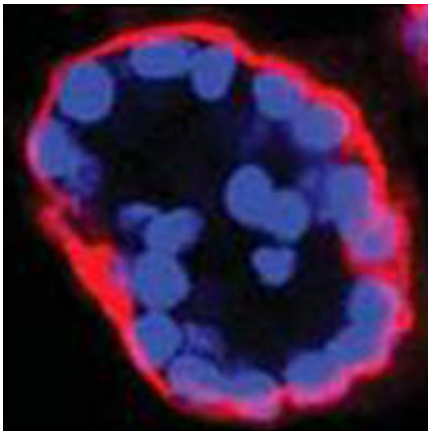


New paper offers insights into how cancer cells avoid cell death

June 19 2013, by William G. Gilroy



(Medical Xpress)—A new study by a team of researchers from the University of Notre Dame provides an important new insight into how cancer cells are able to avoid the cell death process. The findings may reveal a novel chemotherapeutic approach to prevent the spread of cancers.

Metastasis, the spread of cancer from one organ to other parts of the body, relies on cancer cells' ability to evade a cell death process called anoikis, according to Zachary T. Schafer, Coleman Assistant Professor of [Cancer Biology](#) at Notre Dame. Metastasizing cancer cells are able to block anoikis, which normally results from detachment from the extracellular matrix. However, Schafer notes that the molecular

mechanisms that cancer cells detached from the extracellular matrix use to survive have not been well understood.

"This paper reveals that cancer cells that are detached from their normal environment, as they would be during metastasis, rely on the activity of antioxidant enzymes to facilitate their survival," Schafer said. "This class of enzymes is critical for neutralizing oxidative stress and function much like the [antioxidant compounds](#) that are present in a variety of healthy foods."

The paper describes a prominent role for antioxidant enzymes in facilitating the survival of [breast cancer cells](#) after detachment from the [extracellular matrix](#). Conversely, the researchers report, silencing antioxidant enzyme expression reduced tumor formation.

"The results in this paper suggest that targeting [antioxidant enzymes](#) with novel therapeutics may selectively kill off metastasizing cancer cells," Schafer said.

The paper appears in the current issue of the journal *Cancer Research*, which is the most frequently cited cancer journal in the world.

More information: [cancerres.aacrjournals.org/con ...
/73/12/3704.abstract](https://cancerres.aacrjournals.org/con.../73/12/3704.abstract)

Provided by University of Notre Dame

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