

Immune system may impact tumor blood supply

December 15 2010

Scientists at the Dana-Farber Cancer Institute may have uncovered a mechanism for blocking tumor angiogenesis that involves the patient's immune system, according to findings published in *Cancer Research*, a journal of the American Association for Cancer Research.

Angiogenesis is the process by which tumors acquire and process blood, which is needed for their continued growth. Anti-angiogenesis drugs block blood flow and are an important part of <u>cancer</u> treatment.

"Substantial evidence indicates that inhibiting angiogenesis is a validated strategy for cancer therapy, but current approaches are in need of further improvements," said Glenn Dranoff, M.D., associate professor of medicine at the Dana-Farber Cancer Institute.

Dranoff and colleagues analyzed blood and tumor samples from patients who showed clinical responses to treatment with a combination of immune stimulants and regulatory molecules. Unexpectedly, the study showed that these immunotherapies stimulated a host response that targeted the selective destruction of tumor blood vessels. A key step in this process was the ability of patients to generate antibodies that neutralized factors that produce and sustain tumor blood vessels.

Overall, the immune treatments activated cellular processes in the tumor microenvironment that achieved an anti-angiogenic response.

"It appears that the body's own <u>immune system</u> can be used to develop a



new way to block angiogenesis," said Dranoff. "Angiogenesis involves multiple factors, and our studies suggest that it may be advantageous to target several of these at the same time, rather than only focus on one factor, such as vascular endothelial growth factor."

Mark Smyth, Ph.D., head of the Cancer Immunology Program at Peter MacCallum Cancer Center in Australia, and a section editor of Cancer Research, believes this research represents important new information in the angiogenesis arena.

"It has long been recognized that anti-angiogenesis is a worthwhile therapeutic approach to cancer treatment and a number of molecules have been defined as potential targets," said Smyth.

"The important issue here is that combination therapy does, in fact, raise host antibodies to these angiogenic targets. Future efforts to generate immunotherapies to cancer need to keep this information in mind."

Provided by American Association for Cancer Research

Citation: Immune system may impact tumor blood supply (2010, December 15) retrieved 6 May 2024 from <u>https://medicalxpress.com/news/2010-12-immune-impact-tumor-blood.html</u>

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.