Study supports century-old cancer theory

December 12 2005

A Yale study challenges oncology researchers to consider tumor cell hybridization with white blood cells as a major reason cancer metastasizes.

"Cancer cells exhibit a remarkable number of traits normally attributed to white blood cells known as macrophages, including the ability to migrate to lymph nodes and distant organs and to form a new blood supply," said lead author John Pawelek in Yale's school of medicine. "Our data indicate they do this by hybridizing with macrophages."

Pawelek said the idea of white blood cells hybridizing with tumor cells is not new. During the early 1900's the German pathologist Otto Aichel proposed metastasis is caused by cancer cells fusing with macrophages.

"There is now evidence to support all aspects of his proposition," said Pawelek. "Macrophages are among the most motile cells we have. By co-opting the macrophage's ability to move, the hybrid is very different from the original cancer cell. It is able to migrate away from the primary site of tumor formation and take up residence in other areas of the body while it continues to divide."

The study appears in the December issue of Lancet Oncology.