NIH NATIONAL CANCER INSTITUTE

# METHOD OF PREVENTING AND TREATING METASTATIC DISEASE

## REFERENCE NUMBER

E-192-2009

## PRODUCT TYPE

- Therapeutics

## KEYWORDS

- Therapeutic Targets
- Cancer
- Metastatic Disease
- beta-1 integrin signaling pathway

## COLLABORATION OPPORTUNITY

This invention is available for licensing.

## CONTACT

John D. Hewes
NCI - National Cancer Institute
240-276-5515

John.Hewes@nih.gov

## DESCRIPTION OF TECHNOLOGY

The National Cancer Institute's Laboratory of Cancer Biology and Genetics is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize novel methods of treating metastatic disease.

Cancer that recurs as metastatic disease many years after primary tumor resection and adjuvant therapy appears to arise from tumor cells that disseminated early in the course of disease but did not develop into clinically apparent lesions. These long-term surviving, disseminated tumor cells maintain a state of dormancy, but may be triggered to proliferate through largely unknown factors. Inventors at the National Institutes of Health have discovered agents that prevent or treat recurrent metastatic cancer by inhibiting type I collagen production and downstream signaling through beta 1 integrin activation. Blocking activation of beta-1 integrin signaling using pharmacological approaches or using RNA interference was found to prevent reorganization of the cytoskeleton that is associated with proliferation of the dormant tumor cells. The technology provides compositions and methods for modulating the switch from tumor cell dormancy to proliferation clinical metastatic disease in a patient by administering beta-1 integrin signaling inhibitors.

## POTENTIAL COMMERCIAL APPLICATIONS

- Method of treating metastatic disease by targeting components of the beta-1 integrin signaling pathway
- Method of preventing metastatic disease after removal of primary tumors.

## COMPETITIVE ADVANTAGES

Discovery of beta-1 integrin signaling pathway involvement provides a number of therapeutic targets for development of novel cancer therapeutics.

## PATENT STATUS

- **U.S. Issued:** U.S. Provisional Application No. 61/179,641 filed 19 May 2009