Theranostic for Lymphoma, Lung and Pancreatic Cancers

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Technology description

Identifies the Presence of a Tumor-Causing Protein and Inhibits Damage to Surrounding Tissue

This antibody functions as both a targeted cancer therapy and a more accurate diagnostic tool. The unique antibody easily identifies the presence of a tumor-promoting gene linked to the development of lymphoma, lung cancer, pancreatic cancer and other malignancies. Because it binds to a specific cancer-causing protein within cells, the antibody also functions as an effective therapy. In 2010, more than 300,000 new cases of lymphoma, lung and pancreatic cancers were diagnosed in the U.S. alone. Available theranostics have poor accuracy and consistency. The dual-purpose antibody developed by UF researchers provides consistently accurate information about a person's susceptibility to these cancers and guides treatment by predicting the individual's response to various medical interventions. The antibody is also a highly effective therapy that binds with cancer-causing proteins, rendering them less harmful.

Technology

In recent years, the role of proteins in both cancer prevention and development has taken on increasing importance. A human protein called Tnk1/Kos1 has attracted particular interest. When Tnk1/Kos1 is present in its original, full-length version, it is a tumor suppressor. However, when Tnk1 is truncated, or shortened, it reverses its role and becomes a tumor promoter. Loss of normal Tnk1/Kos1 has been linked to the development of diffuse large B-cell lymphomas (DLBCL). Overexpression of shortened Tnk1 has been connected to the development of Hodgkin's Lymphoma, pancreatic cancer, lung cancer and other malignancies. Researchers at the University of Florida have developed a highly specific antibody that can identify whether Tnk1 is present in its original or shortened form. This antibody successfully immunoprecipitates (separates) and identifies truncated Tnk1, and wild type Tnk1 and Kos1. The antibody can be administered through a wide range of applications, including Western blotting, ELISA, immunoprecipitation, immuno histochemistry and immuno cytochemistry. Because the antibody works inside the cell, binding with a harmful variant of the protein, it is also a powerful therapeutic.

Application area

Dual-purpose antibody that can diagnose and treat lymphoma, and lung and pancreatic cancers

Advantages

Produces consistent, accurate results, providing a competitive advantage in the marketplace
Uses a highly specific antibody, detecting the presence of a cancer-causing protein
Binds to a harmful protein variant within cells, reducing damage to healthy tissue

Institution

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