Antibodies for Diagnosis and Treatment of Breast Cancer (Yissum)

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Antibodies from mouse lymphoma cells recognize human breast cancer

Categories	Oncology, breast cancer diagnosis and treatment, antibodies
Development Stage	Positive results obtained in mice and in small number of human samples
Patent Status	U.S. patent pending, PCT publication no. WO 2005/073728
Market Size	Breast cancer has the highest incidence (32%) and is the second most cause for cancer death (15%) in U.S. women. Breast cancer treatment costs about $7 billion each year.

Highlights

- Antibodies generated against mouse lymphoma cells that harbor the virus MMTV (mouse mammary tumor virus) were used to recognize human breast cancer.
- These antibodies can be used either in their current forms or in modified forms for diagnosis, prognosis, and subsequent treatment of certain human breast cancers.
- Working on proving correlation of appearance of p14 antibodies with human breast cancers
- Positive multi-sample trials will enable proof of p14 antibodies as diagnostic

Our Innovation

- Antibodies generated against mouse lymphoma cells that harbor MMTV recognize p14, the leader sequence (N-terminal peptide) of the precursor of the envelope protein of MMTV, and are used for immunohistochemical analysis of human breast cancers. Monoclonal antibodies to p14 can be subsequently humanized to treat breast cancer patients that express p14. Alternatively, P14 may be used as a vaccination against breast cancer.

Key Features

- Completely new approach to diagnosis and treatment of certain human breast cancers
- Possibility of development of vaccine against breast cancers containing MMTV

Development Milestones

- Large multi-sample trials needed to prove diagnostic capability
- Study of possibility of correlating presence of p14 or p14 antibodies in women’s sera with

prognosis

The Opportunity

- According to a SEER estimate, more than 200,000 new cases of breast cancer are diagnosed annually in the United States alone.
- Recent reports claim that about 38% of human breast cancers may contain sequences related to MMTV.

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