Novel Monoclonal Antibodies for Cancer Diagnostics and Therapeutics

ID 1804

Background
Clinical results obtained with the anti-CD20 monoclonal antibody (mAb) (rituximab) and anti-HER2/neu mAb (Herceptin) in patients with B cell lymphocytic malignancies and breast carcinoma have shown that antibody-based immunotherapy may be an effective therapeutic strategy for the treatment of malignant diseases, including melanoma.

The human high molecular weight melanoma-associated antigen (HMW-MAA) is a membrane-bound protein of 2,322 residues which is overexpressed on >90% of the surgically removed benign nevi and melanoma lesions. Besides tumors of melanocytic origin, HMW-MAA has also been found to be expressed by basal cell carcinoma, tumors of neural crest origin (astrocytomas, gliomas, neuroblastomas, and sarcomas), some forms of childhood leukemias, and lobular breast carcinoma lesions.

Technology Description
This invention provides compositions for monoclonal antibodies (Clones TP109 and VF20-VT1.7) or antibody fragments to melanoma associated antigens.

Applications
1. Therapeutic, diagnostic or prognostic for triple negative breast cancer
2. Radio-immunotherapy and Radio-immuno-guided surgery
3. Imaging of primary tumors and metastasis

Advantages
1. High specificity
2. High avidity
3. Can be humanized and used in combination therapies
4. HMW-MAA is highly expressed on multiple solid cancers in addition to melanoma

Stage of Development
Preclinical animal studies completed

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Research Interests

1. Escape mechanisms utilized by tumor cells to avoid immune recognition and destruction

2. Antibody-based immunotherapy of solid tumors

3. Identification of targets for immunotherapy on human cancer stem cells

Publications


