

Antibody and Immunotoxin Treatments for Mesothelin-expressing Cancers

Summary (1024-character limit)

The National Cancer Institute Laboratory of Molecular Biology is seeking statements of capability or interest from parties interested in licensing or collaborative research to further develop, evaluate, or commercialize antibody-based treatments of mesothelin-expressing cancers.

NIH Reference Number

E-091-2009

Product Type

- Therapeutics

Keywords

- Mesothelin
- Antibody
- Immunotherapy
- Therapeutic

Collaboration Opportunity

This invention is available for licensing and co-development.

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Description of Technology

Mesothelin is a cell surface protein that is highly expressed in aggressive cancers such as malignant mesothelioma, ovarian cancer, pancreatic cancer, lung cancer, breast cancer, cholangiocarcinoma, bile duct carcinoma and gastric cancer. As a result, mesothelin is an excellent candidate for tumor targeted immunotherapeutics. However, the antibodies against mesothelin that are available for clinical trials are of murine origin. These antibodies have the potential to elicit immune responses in patients, which may adversely affect the ability to provide patients with repeated doses. Thus, the clinical application of the antibodies may be limited.

In order to address the issue of immunogenicity in patients, NIH inventors have generated anti-mesothelin antibody variable fragments (Fv) of human origin. These antibody fragments (HN1 and HN2)

have the ability to efficiently recognize mesothelin on the surface of numerous cancer cells. As a result, these antibody fragments represent an attractive therapeutic alternative to the murine anti-mesothelin antibodies currently being tested in clinical trials.

Potential Commercial Applications

- Use as an antibody therapeutic for mesotheliomas, pancreatic tumors and ovarian tumors
- Use in an immunotoxin therapeutic for mesotheliomas, pancreatic tumors and ovarian tumors
- Diagnostic for the detection of mesothelin positive tumors
- Research agent for the detection of mesothelin

Competitive Advantages

- Fully human antibody reduces potential immunogenicity, thereby allowing repeated dosing
- Antibody specificity improves the therapeutic efficacy of the agent.

Inventor(s)

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Development Stage

- Pre-clinical (in vivo)

Publications

Ho M, et al. [[PMID 20635390](#)]

Hassan R, Ho M. [[PMID 17945478](#)]

Patent Status

- **U.S. Patent Issued:** U.S. Patent Number 8460660, Issued 11 Jun 2013
- **U.S. Patent Filed:** U.S. Patent Application Number PCT/US10/28336
- **U.S. Patent Filed:** U.S. Patent Application Number 13/259,138

Related Technologies

- E-002-1996
- E-021-1998
- E-139-1999

Therapeutic Area

- Cancer/Neoplasm