

# NOVEL TUMOR SELECTIVE INTERNALIZING ANTIBODIES

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## INVENTION NOVELTY

Novel human monoclonal antibodies recognize a cell surface antigen that has limited normal tissue expression but is highly overexpressed in several types of cancers, including mesothelioma, melanoma, head and neck cancer, lung cancer, glioblastoma multiforme, pancreatic cancer, ovarian cancer, breast cancer, prostate cancer, cervical cancer, skin cancer and testicular cancer.

The antibodies can block tumor invasion, self-renewal and have potential to modulate immune effector cell function.

## VALUE PROPOSITION

The prognosis for patients diagnosed with mesothelioma and other cancers is generally poor and currently available treatments are usually ineffective. Traditional cancer treatments kill all rapidly dividing cells in patients, including non-cancerous cells, limiting therapeutic window. Therefore, therapies that specifically target tumor cells hold much promise for the treatment of cancers that are resistant to current approaches.

This novel invention provides the following advantages:

- **High specificity** for tumor cells
- Can be utilized in several ways including: **antibody-drug conjugation, immune activation and cell based therapy, novel antibody compositions** that are fully human, which confers **minimum immunogenicity**

## TECHNOLOGY DESCRIPTION

Scientists at the University of California, San Francisco have developed a set of human monoclonal antibodies that specifically recognize a cell surface antigen highly expressed in mesothelioma and other cancers, as well as cancers that undergo epithelia to mesenchymal transition (EMT). The antigen is a hallmark specifically expressed by mesothelioma and all subtypes of mesothelioma but not by normal mesothelium. The new antibodies have the potential to guide immunotherapies with greater accuracy against mesothelioma or other cancers expressing the target antigen. Additionally, the novel antibodies are able to block tumor cell invasion, indicating application for inhibition of tumor function such as invasion or self-renewal. Furthermore, the inventors showed that the target antigen is preferentially expressed by tumor-associated blood vessels, thus exhibiting potential as an anti-angiogenic therapy.

The antibodies and antigen have been evaluated in nude mice models using available devices and measurement methods. This technology can be rapidly incorporated into clinical trial.

## APPLICATION

- Targeted cell cancer therapy including:

Antibody drug conjugation – payload delivery of drugs or other compounds to cancer cells

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## CONTACT

Kathleen A. Wilson-Edell  
[Kathleen.Wilson-Edell@ucsf.edu](mailto:Kathleen.Wilson-Edell@ucsf.edu)  
 tel: [View Phone Number](#).



## INVENTORS

- ▶ Liu, Bin

## OTHER INFORMATION

### KEYWORDS

Monoclonal Antibodies, Cancer, Mesothelioma, Tumor specific, Immune Activation, Antibody-Drug Conjugation, Cell Based Therapy, Epithelia to Mesenchymal Transition

### CATEGORIZED AS

- ▶ **Medical**
- ▶ **Diagnostics**
- ▶ **Disease: Cancer**
- ▶ **Therapeutics**

### RELATED CASES

2018-106-0

Immune activation – used as components of bispecific or oligospecific antibodies

Cell based therapy – used in construction of chimeric antigen receptors

- Cancer diagnostic

## LOOKING FOR PARTNERS

To develop and commercialize this technology as an effective treatment for cancer or other diseases.

## STAGE OF DEVELOPMENT

Preclinical

## DATA AVAILABILITY

Under NDA/CDA

## PATENT STATUS

Patent Pending

### ADDRESS

**UCSF**

**Innovation Ventures**

600 16th St, Genentech Hall, S-272,  
San Francisco, CA 94158

### CONTACT

Tel:

[innovation@ucsf.edu](mailto:innovation@ucsf.edu)

<https://innovation.ucsf.edu>

Fax:

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