



## Title of Invention

(Below is limited to 1-page only; be careful not to disclose vital technology content. Please delete these words when the document is finished)

**PI :** Professor Chen-Si Lin

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**Experience:**

Associate Professor in Department of Veterinary Medicine, National Taiwan U.

Head of Zoonosis Center, College of Agriculture and Bioresources, NTU

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**Market Needs:**

Antibody drugs have been viewed as the major development direction for cancer immunotherapy in recent years. Selecting key cancer antigens, producing antibodies that can specifically identify antigens, and effectively preventing the proliferation and metastasis of cancer cells are the key characteristics for considering the therapeutic potential of the specific antibody drug. The currently marketed cancer antibody drugs are mainly divided into two major directions: blocking the growth of cancer cells and activating the immune system. There are many new antibodies still being studied and developed to meet the urgent needs of the cancer treatment market. Therefore, the cancer-targeted antibody market still has plenty of room to grow.

**Our Technology:**

This research focuses on the production of antibodies against a specific cell membrane-bound antigen (kynurenine-3-monoxygenase, KMO) to inhibit the growth and metastasis of cancer cells. Being different from the traditional production of antibody drugs which are produced by the whole antigen protein as the immunogen, we use bioinformatics software to perform multiple calculations and verifications to find the specific amino acid sequence fragments of KMO to prepare antibodies. After confirming that the immunogen can elicit extremely high antibody valence in mice, we used our optimized and efficient fusion hybridoma preparation technology to produce the huge number of monoclonal antibodies. The target monoclonal antibodies currently chosen in this application have high affinity for KMO, can effectively inhibit the cell proliferation, invasion) and migration. The applicants believe that these antibodies have the potential to become a cancer target drug.

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**Strength:**

1. KMO is overexpressed on cancer cells while it is only minor expressed on normal tissues.
2. The method for immunogen selection is unique in this application.
3. The antibodies in this application can efficiently prevent the proliferation, invasion, and migration of cancer cells.

**Competing Products:**

mAb	Brand name	Company	Target	Format	Technology	Indication	US# Approval
Rituximab	MabThera Rituxan	Biogen Inc./Roche, F. Hoffmann-La Roche Ltd./Genentech Inc.	CD20	Chimeric IgG1	Hybridoma	Non-Hodgkin lymphoma	1997
Trastuzumab	Herceptin	Roche, F. Hoffmann-La Roche, Ltd./Genentech Inc.	HER2	Humanized IgG1	Hybridoma	Breast cancer	1998
Bevacizumab	Avastin	Roche, F. Hoffmann-La Roche, Ltd./Genentech Inc.	VEGF-A	Humanized IgG1	Hybridoma	Colorectal cancer	2004

**Intellectual Properties:**

1. The applicants have well and plenty experiences in antibody production.

**Contact (do not need to fill out):**

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