

NEW ANTIBODY THERAPY FOR THE TREATMENT OF BREAST CANCER, AMONG OTHERS

A multidisciplinary research group, with wide experience in oncology and immunology, has developed a new therapeutic strategy for the treatment of breast cancer based on the use of an antibody against a soluble protein with effect on EGFR and Her2 signal pathways.

BACKGROUND

Breast cancer is the second leading cause of cancer deaths in women.

The cell-membrane receptors ErbB are important in human cancer, and there are 4 family members: EGFR, Her2, Her3 and Her4. Tumors with alterations in these receptors are especially aggressive.

20%-30% of patients with breast cancer have an over-expression of Her2 (Her2⁺) and therefore, have a more aggressive cancer. Moreover, Her2 and EGFR co-expression occurs in ~30% of breast cancers.

There are different strategies to treat breast cancer, such as surgery, radiation therapy, chemotherapy, hormone therapy and targeted therapy, like Herceptin®.

TECHNOLOGY DESCRIPTION

This invention would belong to the group of targeted therapies and it's based on the use of an antibody against a soluble protein.

The current unmet medical needs would be:

- There are patients Her2⁺ with trastuzumab resistant breast cancer.
- 70% of patients Her2⁺ respond to anti-Her2 treatment + chemotherapy, but there are 30% of relapses.
- There is no treatment for metastasis.

The experimental results (in vitro assays) support that this new therapy could be applied in Her2⁺ and/or EGFR⁺ breast cancers, Her2⁻ breast cancers and epithelial cancers:

- Inhibition of tumor growth and cell proliferation.
- Cell death by apoptosis.
- Inhibition of Her2 expression.
- Effect on EGFR pathway, in addition to Her2 pathway.

- Effect is not-Her2 dependent.

The innovative aspects rely on the diverse biological effects. The intracellular inhibition occurs at different levels in cancer cell, giving a promising profile to the product.

ADVANTAGES

This new therapy could be applied in Her2⁺ and/or EGFR⁺ breast cancers, Her2⁻ breast cancers and epithelial cancers.

CURRENT STAGE OF DEVELOPMENT

There is an ongoing development plan for more *in vitro* assays for target validation, *in vivo* assays to assess efficacy on tumor growth and metastasis. Therapeutic monoclonal antibodies for a product patent are being tested.

GOAL

We are searching companies interested in the acquisition of the license, but other collaborations may be considered.

PATENT

A patent application with number ES 200801071 was filed on April 2008 and a PCT (PCT//ES2009/000191) was extended one year later.

Applicants: Hospital Clínic of Barcelona, Fundació Clínic and University of Barcelona.

CONTACT

Mireia Angulo
Fundació Clínic
Tel. + 34 (93) 2275400 (ext. 4354)
mangulo@clinic.ub.es