

PROTOTYPE CHIP FOR THE DETECTION OF SERUM ANTIBODIES VERSUS BIOMARKERS AS TUMOR-ASSOCIATED ANTIGENS (TAAs) IN EARLY STAGE BREAST CANCER

<i>Offering Organization:</i>	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. / IMSS
<i>Type of Organization:</i>	Public Research Center/The Mexican Social Security Institute
<i>Development Stage:</i>	Laboratory
<i>Desired Relationship:</i>	<ul style="list-style-type: none"> – Technological research and development financing (technological partner) – Specialized application tests – Creation of a new company (Joint Venture) for the commercialization of the products outlined herein – Licensing of patents
<i>Sector:</i>	Biomedical biotechnology
<i>Area of knowledge:</i>	Medicine
<i>Key words:</i>	Breast cancer, mammary gland, early stage, antigen, antibodies

DETAILED DESCRIPTION:

Problem to be solved:

Breast cancer (BC) is the number one cause of mortality in women worldwide and in Mexico. It is therefore important to develop more effective methods of diagnosis that are easy to use and interpret. In women with early-stage breast cancer (I-II), the disease is confined to the breast and lymph node regions and is potentially curable with surgery ± radiotherapy. The main problem with early-stage diagnosis, however, is the absence of symptoms.

Solution:

This invention is ideal for determining the presence of a cancerous process (in the mammary gland) in the early asymptomatic stages, by analyzing the patient's serum from blood samples.

New and Innovative Aspects:

The present invention relates to a protein-containing device allowing for the early the detection of breast cancer. It allows for the identification of specific antibodies in the serum of breast cancer stage II patients. The results can be observed in a 3 to 18 hour interval, with the naked eye and without the aid of any other equipment.

TECHNICAL CHARACTERISTICS:

The developed device will allow for the diagnosis of breast cancer even in the absence of symptoms and in the early stages of the disease, and is intended as a screening test, useful for analyzing a blood sample for early detection of the disease. Autoantibodies have been identified in the blood of cancer patients these react with self-antigens and they are known as Tumor-Associated Antigens (TAAs). These autoantibodies can be used as reporters indicating the presence of a tumorigenesis and can be used as markers for the immunodiagnosis of breast cancer. A mini-array of TAAs (prototype chip) is a promising tool for the early detection of breast cancer through the identification of antibodies in the bloodstream.

Main advantages derived from its utilization:

- This prototype chip is very sensitive, cheap and easy to use, and the results can be seen with the naked eye.

Applications:

- Detection of early-stage breast cancer (I-II)

INTELLECTUAL PROPERTY

- Utility model filed in 2013
- MX/a/2013/000642

ABOUT THE OFFERING ORGANIZATION

Presentation:

El Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ) is a public research center that belongs to the national technology development and innovation network, the National Council for Science and Technology (CONACyT). CIATEJ is focused on the agricultural, food, health, and environmental sectors with an emphasis on the application of innovative biotechnology.

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