TPI1 RECOMBINANT PROTEIN USEFUL IN THE IMMUNODIAGNOSIS OF EARLY-STAGE BREAST CANCER

Offering Organization:	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
Type of Organization:	Public Research Center
Development Stage:	Commercial Concept Tests
Desired Relationship:	– 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
Sector:	Biomedical biotechnology
Area of knowledge:	Medicine
Key words:	Biomarkers, cancer, diagnosis, TPI1 triose phosphate isomerase, immunoassays

DETAILED DESCRIPTION:

Problem to be solved:

Breast cancer is one of the most common malignancies in women and is the leading cause of death by cancer worldwide, with an incidence of 1.1 million cases annually. If the breast cancer is diagnosed and treated while still in stages I or II, the recovery rate following treatment is close to 100%. However, the effectiveness of treatment in early stages depends on early diagnosis. Candidate biomarkers, identified and assessed, have been reported; however, a frequent problem is that the biomarker detection assays are not sufficiently sensitive or specific enough so as to be reliable for early diagnosis.

Solution:

Given the need to provide a fast and reliable method for diagnosing potential patients, the main object of the present invention is to provide a rapid in vitro diagnosis method for the detection of breast cancer in early stages, by using a recombinant protein TPI1 in its isoforms 1 or 2.

New and Innovative Aspects:

- An in vitro immunodiagnostic method for detecting early-stage (I and II) breast cancer that has a sensitivity of 92.5 % in patients with cancer.
- The use of the TPI1 recombinant protein in its isoform 2 as a specific and reliable biomarker for the early detection and diagnosis of breast cancer.

TECHNICAL CHARACTERISTICS:

A method of in vitro diagnosis is described, wherein a TPI1 recombinant protein in its isoform 2 is used as a marker for the detection and diagnosis of early-stage (I and II) breast cancer. The in vitro diagnostic method includes the following steps: 1) placing biological samples (blood, saliva, urine, biopsy, among others) of patients in the early

stages (I and II) of breast cancer in contact with the TPI1 recombinant protein in its isoform 2; b) identifying the presence of the TPI1 protein in the sample. Steps a) and b) are performed by a technique selected from the group consisting of immuno-dotblot, ELISA, western blot, lateral flow test strips, mini-arrays or microarrays.

Main advantages derived from its utilization:

- The use of the TPI1 recombinant protein as a biomarker for the specific and reliable detection of early-stage breast cancer, thereby reducing the number of people who reach an advanced stage of cancer (stages III and IV) and increasing their chances of survival by reducing morbidity, mortality and economic costs.

Applications:

- Detection and diagnosis of patients with early-stage (I and II) breast cancer.

INTELLECTUAL PROPERTY

- Patent filed in 2011
- MX/a/2011/013245

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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