NON-INVASIVE METHODOLOGY FOR THE DETECTION AND CHARACTERIZATION OF BREAST CANCER SCREENING

A research group from the Biomedical Research Institute of Málaga (IBIMA), Andalusian Public Health System (SAS), University of Málaga and Consorcio Centro de Investigación Biomédica en Red (CIBER), and Roche Pharma have developed a massive sequencing panel mainly for the detection of early breast cancer using a single sample of blood.

The Problem

Breast cancer is the most prevalent tumor in women in Western society. This disease is highly curable since it is normally detected when the tumor is small and localized thanks to screening procedures such as mammograms.

However, the diagnosis of these tumors requires a tissue biopsy, which is an invasive process that is not without risk. In addition, the study of a small proportion of the tumor cannot be offering us a complete picture of the nature of the cancer.

The Solution

It has been patented a new sequencing methodology to increase the capacity to detect circulating tumor DNA (ctDNA) in the bloodstream. In addition, this method can obtain more information about cancer than through the study of conventional diagnostic biopsy.

It has been shown that those women with suspicious mammograms and positive detection of circulating tumor DNA have around an 86% probability of presenting a breast tumour and are more likely to relapse after surgery in the future .

Innovative Aspects

- It is a novel non-invasive methodology that uses blood samples
- This method has a sensitivity (30%), a specificity of 86.36% and a positive predictive value of 88.46%
- It is a useful tool in the evaluation and follow-up of the disease being possible to obtain a certain prediction on the progression of cancer
- It could be used to make personalized therapeutic decisions for each patient.
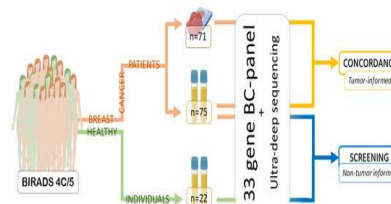
It has been studied the concordance between the mutational landscape of tumor and plasma and performed a non-tumor informed analysis to discriminate between cancer patients and healthy individuals that could potentially be used to non-invasively detect breast cancer prior to any other medical intervention.

Stage of Development:
It has been tested in symptomatic and asymptomatic breast cancer patients

Intellectual Property:

- PCT patent application filed (October 28th, 2022)
- Suitable for international extension (PCT application)

DOI: https://www.mdpi.com/1422-0067/24/1/146

Aim

Looking for a partner interested in a license and/or a collaboration agreement to develop and exploit this asset.

Contact

Consorcio Centro de Investigación Biomédica en Red (CIBER)

otc@ciberisciii.es
https://www.ciberisciii.es