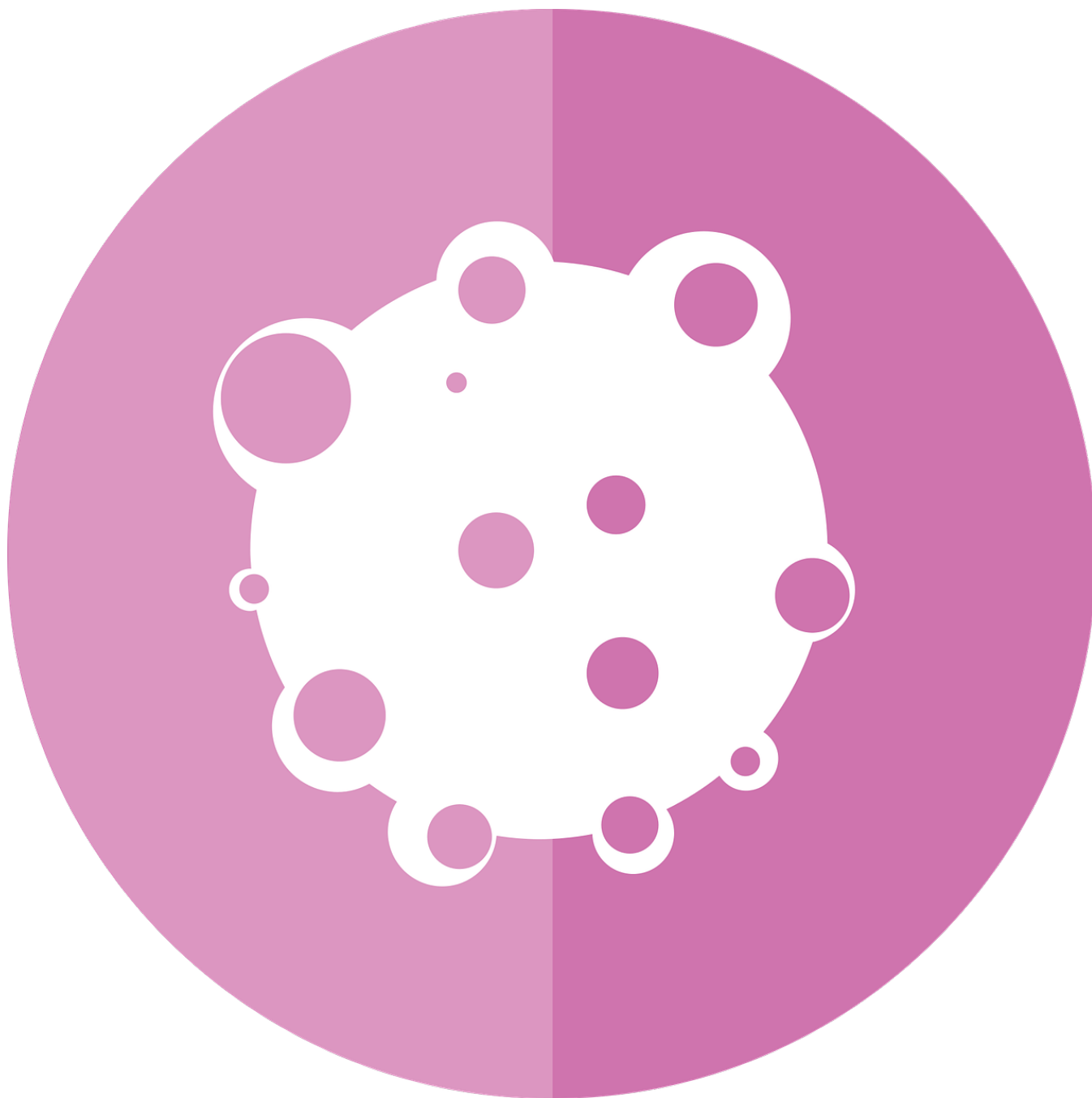# Onco-Rec. To predict cancer relapse, detect minories

Detection of potential tumor-initiating cells (TICs) in peripheral blood to anticipate the relapse in breast and colorectal cancer.

Contact information

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Technological Offers type

Technological solutions

Research and innovation areas

- Health and Wellbeing

ODS

Available from: 2020

Where?

Health Sciences Technologies

Keywords: | blood test | cáncer | Cancer Stem Cells | Health

Brief description of the technology solution and the added value it provides

An algorithm based on the presence of different markers has been designed. These markers are present in tumor-initiating cell (TICs), which could be involved in cancer relapse . These cells are not totally remove in a conventional chemotherapy treatment. Our diagnostic technology is applicable to peripheral blood samples drawn with the usual procedures in the follow-up of patients. The sample is analyzed by flow cytometry techniques, which is included in common routines in hospitals, and at an accessible cost for its standardization. It has allowed us to anticipate the relapse, so if we detect these cells, we can predict that this process is going to happen with a sensibility and specificity higher to the conventional actual methods.

Description of the technological base

Onco-Rec is a combination of molecular markers expression, integrated as an algorithm, witch allow us the detection of tumour-initiating cells (TICs), considering the tumour heterogeneity.

TICs have a different behaviour with respect to the rest of the tumour cells and they can not be removed by a chemotherapy treatment. The population of TICs in peripheral blood through which they will travel great distances to produce metastasis, can easily be below the detection thresholds of conventional diagnostic methods. But unfortunately, they are the potential culprits of relapse in patients. Different markers (which are included in our algorithm) have been describe to phenotype these cells. With Onco-Rec, we can detect TICs with the usual procedures of the patient and the health personnel.

This algorithm makes it possible to reduce the price in the current market test and since it can be implemented in the routine practices of the hospital center, it will not be necessary for an expert in the technique to develop it, facilitating the daily management.

"The detection of tumor-initiatng cells, as a system to predict cancer relapse"

Market demands

Health

- The number of global cancer cases from 2012 to 2030 will increase by up 50%.
- 35% of patients suffer relapses despite advances in treatments in effectiveness and side effects decreased
- TICs are resistant to conventional drugs in cancer treatment.
- The detection of TICs in Spain is made with CELLSEARCH Veridex of Johnson & Johnson® technology, and in spite of detect these cells in blood, it not have high sensibility.
- The relapse make tumors more agresive and mortal.
- TICS in blood are the totally resposable of metastasis, which is one of the principal cause of the cáncer deaths.

Biomedical research field

- The number of potential cancer stem cell markers increase every day but non of them have enougth specificity and sensibility.

"The detection of TICs anticipate the relapse and metástasis, which causes the death of cáncer patients"

Competitive advantages

- We get a specificity of 90% with a sensitivity of 97%.
- We anticipate the relapse is almost two years of 80% of patients and 7 months in all the population analyzed.
- The test is done in hospital routine processes and does not need additional specialized technical personnel.
- For the patient, the test does not imply an additional procedure, is within the routine follow-up.
  Decrease of costs in the test.

"Anticipation to relapse in almost two years in 80% of patients"

Previous references

- We compare the same patients samples with our tecnology and with CELLSEARCH Veridex of Johnson & Johnson®. We made it with 44 colorectal cancer patients and 20 breast cancer patients, in Albacete Universitary Hospital and Clinico San Carlos Hospital of Madrid.

Development stage

- Concept
- R & D
- **Lab Prototype**
- Industrial Prototype
- Production

Contact

Contacto solución tecnológica

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