Tool for predicting the pathological response to a cancer treatment

The technology consists of a method for the prediction of a patient's pathological response to cancer treatment based on a platinum derivative and a taxane, through an analysis of the expression profile of five specific genes.

Description and essential characteristics

The underlying value of this technology consists of the use of a genomic fingerprint composed of five specific genes to predict the pathological response to an ovarian cancer treatment. A complete or positive pathological response is defined as the absence of microscopic residual tumour disease. On this basis, various technological applications have been developed.

The technology's primary application is as a method for predicting a patient's pathological response to cancer treatment based on a platinum derivative and a taxane—for example, carboplatin and paclitaxel—and includes the following procedure:

a) Obtain a biological sample (tissue, fluid, etc.) isolated from the patient.
b) Detect the levels of expression of the five genes that constitute the genomic fingerprint in the biological sample.
c) Assign a probability value of pathological response to the treatment. This value will depend on the expression levels of the five genes in the sample in relation to the expression levels detected for these genes in a reference patient population with a known pathological response.

A second application of this technology is to evaluate the potential efficacy of a specific compound in an ovarian cancer treatment. The method is based on the previous one, and it compares the expression levels of the five genes before and after the administration of the compound to be evaluated.

The detection of differential expression indicates that the compound has activity on one or more genes of the profile and therefore could be a potential chemotherapeutic agent and thus selected for subsequent analysis.

Competitive advantages

This technology makes it possible to evaluate a compound's potential efficacy in an ovarian cancer treatment and to determine the probability of a patient's response to that cancer treatment, as well as assisting the clinician in making decisions concerning the administration of an alternative therapy for those patients with a low probability of response to treatment.

The assessment of the pathological response to a cancer treatment offers better accuracy than clinical assessments (radiological and/or biomarkers), as it is relatively common that complete clinical responses are not complete pathological responses. This is due to the persistence of tumour cells (not detectable by radiological tests or biomarkers) that are responsible for a subsequent relapse.

Type of collaboration sought

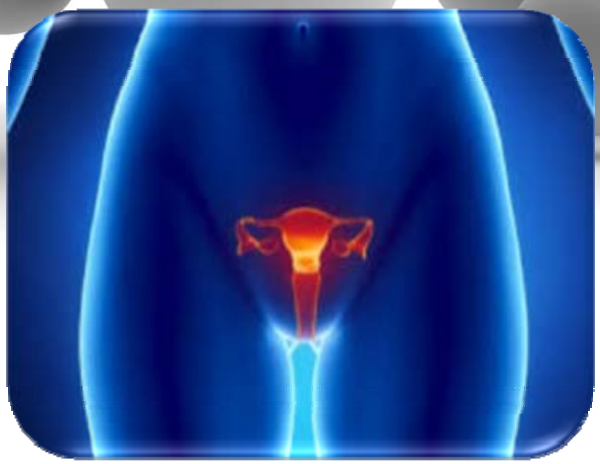
Cooperation is sought with any Party interested in partnering, licensing or investing in the technology, whether it be an investor to fund the project, a partner interested in getting involved in any of the various phases until its placement on the market, a patent licensee, etc. Among the organisations potentially interested in this technology would be those devoted to the manufacture, commercialisation and/or distribution of disease diagnosis kits; as well as universities, hospitals, research centres and all types of institutions engaged in cancer diagnosis and treatment research.

Current stage of development

R&D Phase

Current state of intellectual property

Spanish patent P200930438, granted in November 2011.



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