Tool for predicting the clinical response to a cancer treatment

Tool for the prediction of a patient's clinical response to an ovarian cancer treatment based on a platinum derivative and a taxane, by means of the analysis of the expression profile of eight specific genes.

Description and essential characteristics

The underlying value of this technology consists of the use of a genomic fingerprint composed of eight specific genes to predict the clinical response to an ovarian cancer treatment. On this basis, various technological applications have been developed.

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

a) Obtaining a biological sample (tissue, fluid, etc.) isolated from the patient.
b) Detecting the amount of gene expression product from the eight genes that constitute the genomic fingerprint, in the biological sample of step (a).
c) Assigning a probability value of clinical response to the treatment. This value will depend on the amount of gene expression product from the eight genes in the sample obtained in (a) in relation to the amount of expression detected for these genes in a reference patient population with a known clinical response.

A high probability of clinical response indicates long-term distant recurrence-free survival and/or long-term global survival.

A second application of the analysis of the expression profile of these eight genes consists of a method for evaluating the potential efficacy of a specific compound in an ovarian cancer treatment. The method is based on the previous one, and it compares the amount of gene expression product from the eight 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. This assistance will help overcome the limitations due to the acute and long-term toxicities associated with this type of treatment.

Furthermore, the disclosed methods may be totally or partially automated; for example, by means of a robotic sensor equipment for detecting the amount of expression product from the genes in the biological sample or for the computerized comparison between said quantity and the one corresponding to a reference patient population with known clinical response.

Type of collaboration sought

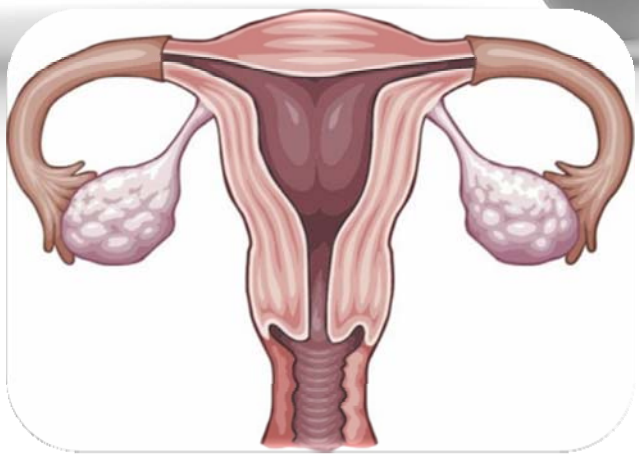
Cooperation is sought with any Party interested in partnering, licensing or investing in the technology, whether it be an investor to fund the project, a partner interested in getting involved in any of the various phases until its placement on the market, a patent licensee, etc. Among the organisations 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 P200930400, granted in November 2011.



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Technology Offer from the Foundation for Biomedical Research of La Paz University Hospital