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Predictive DNA methylation markers for platinum response in cancer

One of the major problems associated with the identification of biomarkers for clinical use, is the lack of validation in different cohorts of patients after publication in scientific journals. More than 50,000 manuscripts/year are currently estimated in this field, and only 18 candidates in recent decades have been studied further in clinical trials with cancer patients. Within the cancer markers, the predictive ones are most needed in order to help in the treatment election, as nowadays, the vast majority of tumors are still treated with the same conventional therapy of the last 20 years, characterized by its low specificity, high toxicity and lack of ability to discriminate between patients with different sensitivity. Platinum compounds, are the standard treatment of tumors with high incidence such as lung, ovary and colorectal, so finding markers able to discriminate differential response to its use would allow patient selection and optimizing the use of chemotherapy and associated health spending. My laboratory is focussed in the study of the epigenetic biomarkers that we have identified and published from previous research projects, expanding their use to other validation cohorts of patients with solid tumors treated with platinum, that could eventually benefit from its use. We are also working in the identification of novel biomarkers for therapy response election, first through exosomal content characterization, coming both, from resistant cells and circulating in the serum of cancer patients; and secondly, through the development of platinum-predictive artificial intelligence systems generated by the omics data "*in vitro*", "*in silico*" and from the health system patients. We validate our findings through different high sensitivity epigenetic methodologies of routine in the laboratory and establish functional assays to validate in all cases the association with the response to therapy.

Biography

Inmaculada Ibanez de Caceres has completed her PhD from Complutense University of Madrid, Spain; 6 years of Post-doctoral studies from Fox Chase Cancer Center at Philadelphia, and IIB/CSIC, from the National Research Council, Spain. She coordinates the experimental therapies and biomarkers group at The Sanitary Research Institution IdiPAZ, and is the Director of the Cancer Epigenetics Group at University Hospital La Paz, Madrid. She has published more than 30 papers in reputed journals, is the main author of two patents based on biomarkers of clinical use, one of them already licensed and under exploitation, and has been serving as a Full Member representing her institution at the biomarkers platform from the European Infrastructure for Translational Medicine (EATRIS).

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