CSIC, in collaboration with HCB, IDIBAPS, UB and ICREA, has developed a method for personalizing combined therapeutic strategies with immune check-point inhibitors (ICI) in patients suffering from cancer, based on a 10-marker immune-metabolic signature that classifies tumor samples into 3 distinct clusters according to the combined expression levels of these markers. This method could be used for immune-metabolic classification, prognosis and monitoring or as a drug screening tool in a variety of tumor types.

Industrial partners from the pharmaceutical or diagnostics industry are being sought to collaborate through a patent licence agreement.

Predictive biomarker signature for solid tumors

The efficacy of immune check-point inhibitor (ICI) therapy ranges from 30-40% in sensitive tumors to <5% in immune-resistant tumors. Current predictive methods have low sensitivity and poor specificity identifying patients that could benefit from ICI therapy.

Cancer informative biomarker signature is an immune-metabolic signature that affords a precise classification of patients bearing a variety of solid tumors into 3 distinct clusters, reflective of their immune and metabolic status of the tumors. Such a classification should provide oncologists with a guidance for decision-making of the most appropriate candidate therapeutic approaches that include ICI drugs.

This signature has been generated through analysis of an extensive cohort of 4,200 samples from 11 different tumor types, all of which could be unambiguously classified into one of three immune-metabolic clusters.

Main innovations and advantages

- The immune-metabolic signature constitutes a great advance for the selection of the best treatment strategy for each patient suffering from a solid tumor.
- This method could be also used as prognostic biomarker, clustering patients according to their responsiveness to ICI treatments.
- Readily implemented to assist in decision making for therapeutic approaches tailored to a tumor’s likely responsiveness to ICI in combination with metabolic interventions, thus improving the management of oncological patients and, notably, expediting therapeutic decision making, a critical determinant of outcome.

Patent Status
European patent application filed

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