Diagnostic

Kit to predict and / or predict the response to a treatment with FGFR inhibitors

A research group of the Andalusian Public Health System in collaboration with the Hospital 12 de Octubre de Madrid and the CSIC, has developed an in vitro method and kit to predict the response of a subject suffering from lung cancer to treatment with inhibitors of FGFR.

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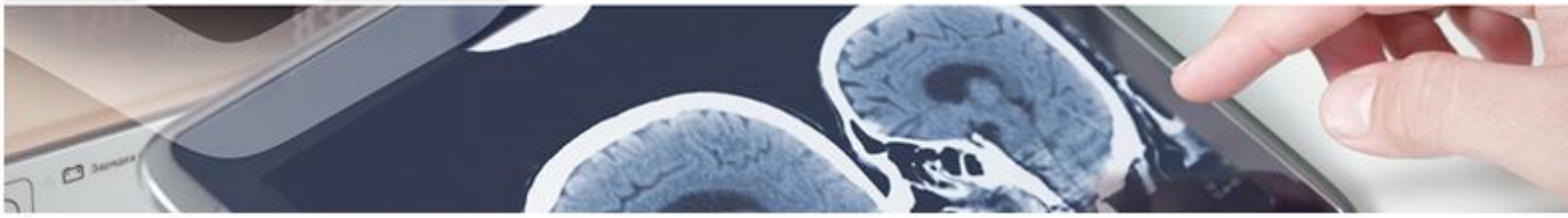

Description

Inhibitors of FGFR (fibroblast growth factor receptor) do not show efficacy in all patients, although they have been previously selected with the current predictive criteria of sensitivity to these inhibitors. The criteria for selecting patients to access clinical trials with FGFR inhibitors have generally been directed to the detection of the amplification of some FGFR. However, the only alterations that are associated with a good response to these inhibitors are activating mutations or translocations, which constitute a very low percentage of patients (5-10%). Furthermore, this criterion has been widely criticized due to the poor results obtained in these trials, with a very low percentage of partial responses. Therefore, other biomarkers are necessary to correctly stratify patients and predict their response to this type of therapy.

For its part, it has been proven in bladder cancer that mRNA levels of markers such as E-cadherin and N-cadherin could be used together to predict the response to treatment with an FGFR inhibitor. But what has not been described so far is the relationship between the level of expression of N-cadherin on the one hand and the level of expression of FGFR1 and / or FGFR4 on the other, as biomarkers, to determine whether treatment with inhibitors of FGFR is effective in a patient suffering from lung cancer.

Our research groups have developed a predictive model of the response to treatment with FGFR inhibitors in patients, according to a high expression of N-cadherin and also a high expression of at least one of the FGFRs selected among FGFR1 and / or FGFR4. A high expression of FGFR1 in xenograft models derived from lung cancer patients shows that the efficacy of a selective FGFR inhibitor is only verifiable in patients with high expression of N-cadherin.

Advantanges

1. Allows you to define the group of patients to be benefit from FGFR inhibitor therapy and that, with current patient selection criteria (FGFR1 amplification) are not candidates for the treatment.
2. Avoid unnecessarily treating patients who will not respond to treatment, reducing the effects unnecessary side effects of ineffective treatment, prioritizing the search for alternative treatments faster, saving treatment costs and improving expectations of an effective response.
3. Assists in the clinical development of new, more effective FGFR inhibitors.
4. Demonstrates for the first time that the pro-oncogenic function of the FGFR1 and FGFR4 genes in lung cancer depends on the expression of N-cadherin.

Intellectual Property

Protected by national phase patent application in Europe

Aims

Exploitation and / or collaboration license agreement.

Classification

Área: Diagnostic
Patología: Cancer/ Oncology/ Lung cancer

Junta de Andalucía

IBIS Instituto de Biomedicina de Sevilla

FISEVI Fundación Pública Andaluza para la Gestión de la Investigación en Salud de Sevilla

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