

TECHNOLOGY OFFER:

Biomarkers to identify grades of asthma severity in patients.

BACKGROUND

Asthma is a chronic inflammatory disease of the respiratory tract, whose pathogenesis involves various cells and mediators of inflammation.

The WHO estimates that currently there are around 334 million patients with asthma in the world, being the most frequent chronic disease in children. Its prevalence in Spain is around 5% for adult population and up to 10% for children, affecting around 2.5 million people. In Europe, approximately 20% of the population is affected, which means an annual cost of 25,000 million euros.

Asthma occurs with bronchial hyperresponsiveness (BHR) and variable airflow obstruction, totally or partially reversible, due to drug action or spontaneous. It is a heterogeneous syndrome that results from complex interactions between environmental and genetic factors.

Currently, the diagnosis of asthma is based on clinical manifestations: wheezing, dyspnea, cough, chest tightness and in the demonstration of reversible airway obstruction (guide symptoms). But none of these symptoms and signs are specific to asthma. The most commonly used classifications are based on their severity and the degree of control achieved with the treatment.

There are markers of presence of inflammation via th2 which support the diagnosis of asthma, such as : eosinophils, exhaled nitric oxide or periostin. However, approximately 50% of asthmatic patients do not present overexpression of this pathway.

Currently, it is not possible to classify the severity of asthma between intermittent or mild persistent asthma or other more severe forms. The most commonly used marker for this purpose is the determination of eosinophils in blood or sputum.

It is therefore currently a clear difficulty in the diagnosis of asthma and in the determination of its severity in clinical practice, even more if it develops independently of th2 inflammation pathway.

TECHNOLOGY DESCRIPTION

The present invention offers a set of miRNAs biomarkers able to identify patients at risk of developing asthma,

Moreover, the quantification of these biomarkers allow to identify different levels of severity in patients with asthma, independently of asthmatic endotype and the inflammation pathway involved.

The existing methodology for the quantification of these biomarkers offers a high reliability of the prediction (AUC 0.78) in blood samples, being therefore a useful biomarker in the diagnosis / prognosis / selection of patients suffering from asthma.

ADVANTAGES:

- Is a very quick method (hours), easy to perform, reliable and minimally-invasive (blood sample).
- It provides an objective test of asthma diagnosis, independently of professionals and patients expertise.
- The method identifies asthma patients independently of the inflammatory pathway activated.
- It can identify asthma severity degree therefore helping in treatment decisions.

CURRENT STAGE OF DEVELOPMENT

Different detection methods for these biomarkers, in development.

Further research in potential the use of these biomarkers in other asthma related diseases.

GOAL

License agreements and/or co-development and commercialization agreements with in vitro diagnostic companies for the further development and commercialization of products derived.

PATENT

Priority Spanish patent application May 2017.

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