Biomarkers predictive of cardiac ischaemia risk

DESCRIPTION OF THE TECHNOLOGY

miRNAs play a role in cardiovascular disease, and in particular in ischaemic pathology. It has been observed that during cardiac ischaemia there are defined patterns of miRNA expression, including the re-expression of fetal genes, which are normally only expressed in early stages of heart development.

We now know that some miRNAs are involved in the generation of heart failure after myocardial infarction, the appearance of various types of arrhythmias, as well as in various congenital heart diseases, while other miRNAs are associated with fibrosis and related to ventricular remodelling.

Therefore, under this idea, we have selected circulating miRNAs whose altered levels in serum/plasma of patients may be related to the risk of suffering an ischaemic event.

MARKET APPLICATION SECTORS

Sectors of application are public or private health systems with cardiology services.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- Promoting the use of biomarkers for the prevention of cardiac pathologies.
- Early detection of the risk of an ischaemic event.
- Cost savings in the healthcare system.

CURRENT STATE OF DEVELOPMENT

The invention is in TRL 4/5. The technology has been validated in 19 control patients and 55 cases. The next step will be to perform a more specific validation of 40 miRNAs by qPCR in order to develop a predictive algorithm.

INTELLECTUAL PROPERTY RIGHTS

National Patent EP21383223, dated 27 December 2021

Title: Circulating miRNAs as predictive biomarkers of cardiovascular disease risk associated with ischaemic events.

COLABORATION SOUGHT

A company is sought in the field of diagnostic kits, for patent licensing, future commercialisation, and subsequent clinical validation in a larger cohort of patients.

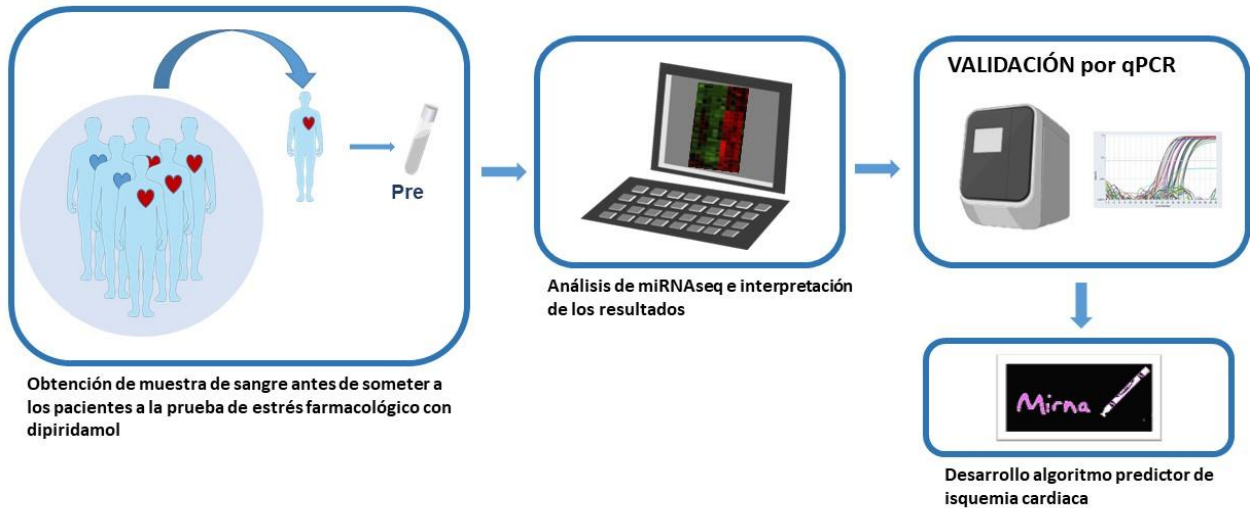# Biomarkers predictive of cardiac ischaemia risk

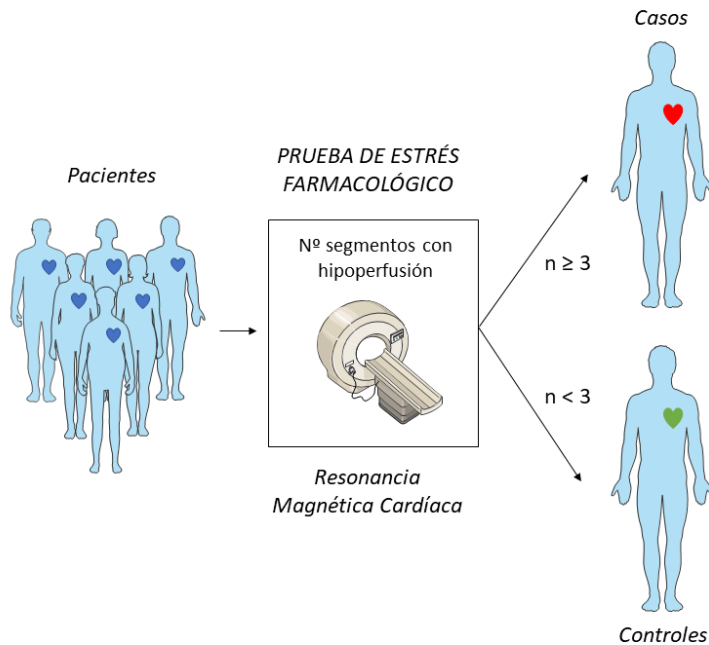*Image 1. Schematic diagram for miRNA analysis.*

Image 2. Separation of patients according to differentially expressed miRNAs between "cases" and "controls".

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CONTACT DETAILS

OTRI IIS La Fe

otri@iislafe.es

+0034 618 73 00 95

Health Research Institute Hospital La Fe

Avinguda de Fernando Abril Martorell, nª 106

46026 Valencia- SPAIN