

miRNA Signatures for Pulmonary Hypertension

The technology relates to miRNA biomarkers to identify patients with pulmonary hypertension (PH), and sub-classify patients with pulmonary arterial hypertension (PAH) and chronic thromboembolic PH (CTEPH).

Proposed use

The present invention concerns a small panel of circulating miRNAs, derived from an unbiased screen of over 600 miRNAs, that help identify PH, and isolate two treatable subtypes of PH from a population of patients at with PH; namely, pulmonary arterial hypertension (PAH) and chronic thromboembolic pulmonary hypertension (CTEPH). It also concerns another panel of miRNAs that can distinguish patients with PAH from CTEPH. These panels can be used independently or coupled with plasma BNP measurements to enable accurate diagnosis in the patient investigation pathway.

Problem addressed

There is currently no specific blood test for pulmonary hypertension. Only plasma BNP or NT-proBNP are routinely used for prognosis and are non-specific markers of cardiac stress elevated in patients with heart disease irrespective of the presence of PH. This invention offers the prospect of an accessible point of care test for earlier diagnosis and distinguishing subtypes of pulmonary hypertension, allowing patients to be aligned with the correct management pathway. It would empower non-specialists, who at present rely on non-specific tools (e.g. ECG, plasma BNP) to identify patients for referral.

Technology overview

The key features of this technology include:

- A panel of miRNAs to identify PH and distinguish between subtypes of from a population of patients at risk of the condition, namely PAH and CTEPH.
- Another panel of miRNAs that can distinguish patients with PAH from CTEPH.

Intellectual property information

An International PCT application (WO2024/089437) has been filed to protect the miRNA panels. The application is entering national phase prosecution.

Lead Inventor information

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Benefits

- Accessible point-of-care test for earlier diagnosis of PH.
- Distinguishes subtypes of PH, allowing for patients to be aligned with the correct management pathway.
- Empowers non-specialists, who at present rely on non-specific tools, to identify patient for referral.

Development Stage

- TRL₃

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