

Targeted Mass Spectrometry – Particular Protein or Set of Proteins Absolute Expression for Enhanced Cardiac Diagnostic and Medicine

Powerful technique for determining the absolute expression of particular proteins in biological samples.



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IP Status

Patented, Patent application submitted

Seeking

Development partner, Commercial partner, Seeking investment, University spin out

Background

There are limitations on molecular diagnosis of cardiac diseases and medicine. Except for genetic diseases, no quantitative protein assays are available clinically to provide accurate molecular diagnosis of majority of cardiac diseases. Therefore, precision medicine in cardiac diseases are a trial and error.

With numerous targeted medicine available for cardiac diseases, lack of molecular diagnosis has been the bottleneck for physicians to select effective therapeutics and to prevent drug-induced side-effects.

Tech Overview

SFU researchers have created a new a mass spectrometry-based quantitative protein assay for cardiac molecular diagnosis and drug efficacy screening. Targeted quantitation of Nav1.5 sodium channel protein was developed.

Nav1.5/SCN5A is the pore forming

Benefits

- Improved specificity by accurately detecting and quantify Nav1.5 and provide valuable information about the underlying Nav1.5 involved mechanisms of the disease
- Ability to detect proteins at very low levels in a cardiac biopsy sample, thereby providing a more accurate and sensitive diagnosis of the disease
- It can be used to measure the expression of Nav1.5 in individual patients, which is important for the development of personalized medicine
- It can be also used to as a cardiac biomarker assay that can diagnosis cardiac diseases and indicate therapeutic efficacy.
- Does not require control samples
- Does not require antibodies or pure protein standards
- Can be applied to any biological samples
- Can be multiplexed with existing mass-spectrometry based protein quantitation assays implemented in the clinic.

Applications

Targeted mass spectrometry has several applications in the field of cardiac research and medicine, including:

- As a Cardiac biomarker assay, it can serve for drug efficacy screening.

- Drug discovery and development, clinical molecular diagnosis and prognosis, mechanistic studies and risk assessment

Patents

- 63/329164

Learn more about this opportunity

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