Cleveland Clinic Innovations

PRODUCT
Diagnostic Assay that measures total Hydrogen Sulfide (H2S) in the body

INDICATION
Diagnostic, Cardiovascular, Neurological, Bio-marker

VALUE PROPOSITION
- H2S has been linked to aging, CVD, and neurological risks
- Diagnostic tool used to measure total systemic tool to measure Total H2S.

DEVELOPMENT STAGE

Development Complete

INTELLECTUAL PROPERTY

Patent Pending

RELATED PUBLICATIONS

Malaeb et. al. “Stable Isotope dilution mass spectrometry quantification of hydrogen sulfide and thiols in biological matrices”, Redox Biology, vol. 55 (2022)

CONTACT INFORMATION
Saqib Sachani
Associate Director, Business Development and Licensing
Sachans@ccf.org
216-672-1913
IDF# 2022-069

A novel assay to measure total H2S levels in biological samples

Inventor: Stanley Hazen, MD, PhD

UNMET NEED

- Dysregulated levels of Hydrogen Sulfide (H2S) in plasma have been associated with cardiovascular and neurological diseases
- H2S is a colorless and labile gas produced by mammalian enzymes and enteric sulfur-reducing bacteria that plays important (patho-) physiological processes in humans.
- The presence of H2S in our bodies is involved in both physiological and pathological processes such as aging, diabetes, neurological disorders, cancers, etc.
- Currently, there is no product out in the market capable of accurately quantifying total H2S levels.

SOLUTION

- Hazen laboratrory has developed a heavy isotope labeled sulfide ion [34S]S2- that can be used as an internal standard for mass spectrometry (MS).
- Developed a novel reduction/derivatization strategy (reducing reversibly oxidized forms of sulfide prior to derivatization) for a LC-MS/MS based method utilizing the heavy isotope to quantify “Total H_2S” levels.
- Provides a tool to measure total H_2S as a marker for predicting heightened risk of numerous degenerative diseases by providing an assay/kit for estimating Total H_2S from biological samples