TECHNOLOGY

Fluorescence-Based Assay to Screen for Mitochondrial Protective Compounds

OVERVIEW

The UMB inventors have developed an enzymatic assay which is a sensitive method for detecting mitochondrial damage. It is based on coupled enzymatic reactions that produce a detectable fluorescence signal in the presence of the reduced or oxidized form of nicotinamide adenine dinucleotide (NADH/NAD) and can detect nanomolar levels of pyridine nucleotides. The assay was used to measure the calcium-induced swelling effects on isolated rat brain or liver mitochondria, which was shown to be blocked by cyclosporin A or Bongkrekic acid, which are inhibitors of mitochondrial permeability transition that leads to apoptosis.

APPLICATIONS

-Screening for compounds that protect mitochondria against calcium-related damage leading to apoptosis.
-Screening for compounds with protective effect in brain damage induced by hypoglycemic coma, focal ischemia, and trauma.

ADVANTAGES

-Simple, reliable, and sensitive assay.
-Suitable for high throughput drug screening.
-May be employed as a kit.

STAGE OF DEVELOPMENT

The assay is suitable to use with isolated mitochondria.

R&D REQUIRED

Additional research for adaptation as a screening kit.

LICENSING POTENTIAL

UMB seeks development partner for licensing and/or sponsored research.

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PATENT STATUS

U.S. Patent No. 7,348,135, issued March 25, 2008.

CATEGORIES

- Research Tools, Antibodies, & Reagents

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ATTACHMENTS

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