

Mitochondrial Permeability Transition Pore Assay Kit

Mitochondrial Permeability Transition Pore Assay

CATALOG #
AAA332620

PRODUCT SYNONYMS

Mitochondrial Permeability Transition Pore; Mitochondrial Permeability Transition Pore Assay; MPTP; Mitochondrial Permeability Transition Pore assay kit

PRODUCT SPECIFICATIONS

Samples	Cells
Usage Note	Do not mix or substitute reagents or materials from other kit lots or vendors.
Preparation and Storage	Stored at -20 degree C for 12 months, protected from light

ADDITIONAL INFORMATION

Related Product Information for Mitochondrial Permeability Transition Pore assay kit	Principle of the Assay: Mitochondrial permeability transition pore (MPTP), also known as magachannel, is a non selective high conductivity channel that exists between the inner and outer membranes of mitochondria and is composed of multiple protein complexes. MPTP may be involved in the release of mitochondrial components during cell death. The normal mitochondrial inner membrane of a cell can maintain a normal mitochondrial potential gradient to ensure cellular respiration and energy supply. With the intake and release of Ca ²⁺ , a low conductivity permeability transition pore switches back and forth between opening and closing. During apoptosis and pathological death of cells, the permeability of mitochondrial membrane potential transfer pore changes, Ca ²⁺ overload, mitochondrial glutathione oxidation, increase of reactive oxygen species, including subsequent release of cytochrome C, and mitochondrial membrane potential decline all lead to the activation of MPTP. Mitochondrial Permeability Transition Pore Assay Kit s a more direct detection method for detecting the opening of MPTP than only based on mitochondrial membrane potential analysis. The principle is: Firstly, loading Calcein AM through passive transportation, which is a kind of cell staining reagent for fluorescent labeling of living cells. It can easily penetrate the living cell membrane and is cleaved by intracellular esterase to form the membrane-impermeable polar molecule Calcein, which is then trapped in the cell and causes the cytoplasm including mitochondria to emit strong green fluorescence. After adding CoCl ₂ , the fluorescence from the cytoplasm is quenched by CoCl ₂ , only left fluorescence in the mitochondria. As a control, cells can be loaded with Calcein AM and CoCl ₂ , and treated with Ionomycin, so as to make cells load more Ca ²⁺ , which causes the activation of MPTP and quenching of mitochondrial fluorescence.
Product Categories/Family for Mitochondrial Permeability Transition Pore assay kit	Cytology; Cellular states; Mitochondrial detection

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/assay-kits/mitochondrial-permeability-transition-pore/332620>