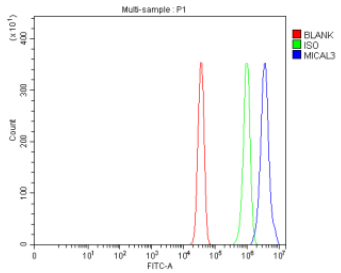
MICAL3 Antibody / Molecule interacting with CasL protein 3 (FY12787)

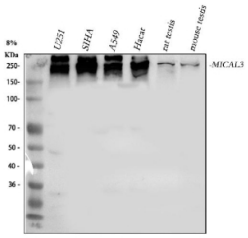
Catalog No.	Formulation	Size
FY12787	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q7RTP6
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This MICAL3 antibody is available for research use only.



Flow Cytometry analysis of U251 cells using anti-MICAL3 antibody. Overlay histogram showing U251 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-MICAL3 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Western blot analysis of MICAL3 using anti-MICAL3 antibody. Lane 1: human U251 whole cell lysates, Lane 2: human SiHa whole cell lysates, Lane 3: human whole cell lysates, Lane 4: human Hacat whole cell lysates, Lane 5: rat testis tissue lysates, Lane 6: mouse testis tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-MICAL3 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. Multiple bands are detected between ~200 and 250 kDa with an occasional higher species, consistent with reported post-translationally modified forms and partially SDS-resistant complexes of the large MICAL3 protein (predicted ~224 kDa).

Description

MICAL3 antibody detects Microtubule-associated monooxygenase, calponin, and LIM domain-containing protein 3, an actin-modifying enzyme that regulates cytoskeletal organization and vesicle trafficking. Encoded by the MICAL3 gene on chromosome 22q11.21, this multidomain oxidoreductase functions downstream of Rab GTPases to control exocytosis and vesicle docking at the plasma membrane. MICAL3 is part of the MICAL protein family, characterized by an N-terminal flavoprotein monooxygenase domain, calponin homology domain, LIM domain, and coiled-coil regions that mediate interactions with cytoskeletal and vesicular components.

MICAL3 catalyzes F-actin oxidation, leading to filament disassembly and cytoskeletal remodeling required for vesicle fusion. It interacts with Rab8A and Rab13, forming complexes that regulate polarized exocytosis and membrane trafficking in epithelial cells. MICAL3 is localized to vesicular membranes and actin-rich regions of the cytoplasm, where it coordinates actin depolymerization and vesicle release. Its enzymatic activity is dependent on flavin adenine dinucleotide (FAD) and modulates actin dynamics through redox reactions on specific methionine residues.

The MICAL3 antibody is used in cell biology, neurobiology, and membrane trafficking research to study cytoskeletal regulation and exocytosis. Western blot analysis identifies a 230 kilodalton band corresponding to MICAL3, while immunofluorescence reveals punctate cytoplasmic staining in vesicle-associated regions. This antibody enables investigation of actin redox control, vesicle tethering, and neuronal growth cone dynamics.

MICAL3 has been implicated in axonal transport, endocytosis, and cancer cell migration. Its deregulation may contribute to disorders involving vesicle trafficking or cytoskeletal disorganization. The MICAL3 antibody provides a validated tool for studying redox-regulated actin remodeling and membrane dynamics. NSJ Bioreagents offers this antibody optimized for western blotting and flow cytometry, ensuring high sensitivity and reproducibility in studies of cytoskeletal and vesicular processes.

Application Notes

Optimal dilution of the MICAL3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human MICAL3 recombinant protein (Position: K458-L1592) was used as the immunogen for the MICAL3 antibody.

Storage

After reconstitution, the MICAL3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.