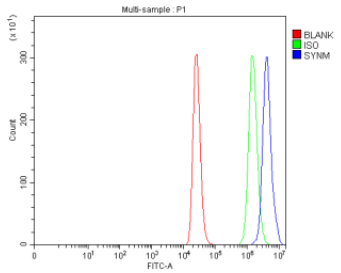
SYNM Antibody / Synemin (FY12346)

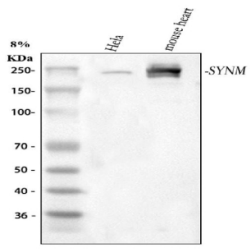
Catalog No.	Formulation	Size
FY12346	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse
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	O15061
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SYNM antibody is available for research use only.



Flow Cytometry analysis of THP-1 cells using anti-SYNM antibody. Overlay histogram showing THP-1 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-SYNM 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 SYNM using anti-SYNM antibody. Lane 1: human Hela whole cell lysates, Lane 2: mouse heart 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-SYNM 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. Synemin (SYNM) was detected at ~240 kDa in human HeLa and mouse heart lysates, consistent with the high-molecular-weight Î±/H isoform described in muscle and non-muscle cells. The upward shift relative to the 173 kDa predicted size reflects isoform length and extensive phosphorylation typical of intermediate filament proteins.

Description

The SYNM antibody targets Synemin, a large intermediate filament-associated protein encoded by the SYNM gene. Synemin belongs to the intermediate filament (IF) protein family and serves as a cytoskeletal crosslinker that connects desmin and vimentin filaments to cellular structures. Through these interactions, Synemin helps maintain cellular architecture, mechanical stability, and signaling dynamics. The SYNM antibody allows precise detection of Synemin to study cytoskeletal organization and mechanotransduction in muscle and non-muscle cells.

Synemin exists in multiple isoforms, including alpha and beta forms, which differ in size and tissue distribution. The alpha isoform is primarily expressed in striated muscle, while the beta isoform occurs in smooth muscle and non-muscle tissues such as astrocytes and hepatocytes. Both isoforms contain a conserved intermediate filamentÃ¯Â¿Â½binding domain that mediates filament anchoring and a unique C-terminal tail that interacts with cytoskeletal and signaling proteins. The SYNM antibody detects these isoforms, enabling evaluation of Synemin expression across tissues and developmental stages.

Functionally, Synemin acts as a structural scaffold linking intermediate filaments to focal adhesions, costameres, and the plasma membrane. It binds to alpha-actinin, dystrophin, and protein kinase A regulatory subunits, integrating cytoskeletal mechanics with signal transduction. Loss or mutation of Synemin disrupts cell shape, elasticity, and contractility, emphasizing its role in maintaining structural integrity. Researchers employ the SYNM antibody to characterize these cytoskeletal connections and assess their impact on tissue strength and cellular signaling.

Synemin expression is prominent in cardiac and skeletal muscle, where it contributes to sarcomere alignment and force transmission. Dysregulation of Synemin may contribute to muscular dystrophies, cardiomyopathies, and other myopathic conditions. The SYNM antibody supports these investigations by providing a consistent and specific reagent for identifying Synemin in muscle biopsies, cultured myocytes, and tissue sections. Beyond muscle, Synemin has been implicated in glial and epithelial cell structure, suggesting roles in neurobiology and cancer progression.

Experimental applications of the SYNM antibody include western blotting, immunofluorescence, and immunohistochemistry. These assays reveal Synemin's filamentous distribution and dynamic rearrangement during cell migration or mechanical stress. NSJ Bioreagents supplies the SYNM antibody to facilitate ongoing research into cytoskeletal organization, signal transduction, and mechanobiology. Its reproducible specificity ensures reliable detection across experimental platforms, enabling detailed study of how Synemin contributes to cellular resilience, structure, and disease processes.

Application Notes

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

Immunogen

E.coli-derived human SYNM recombinant protein (Position: R93-D1554) was used as the immunogen for the SYNM

antibody.

Storage

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

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