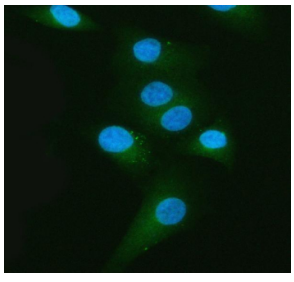
MLPH Antibody / Melanophilin (FY12882)

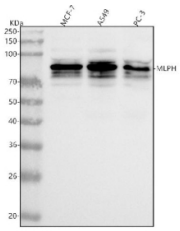
Catalog No.	Formulation	Size
FY12882	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
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	Q9BV36
Localization	Cytoplasm
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry: 5ug/ml Immunofluorescence: 5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This MLPH antibody is available for research use only.



Immunofluorescent staining of Melanophilin/MLPH using anti-MLPH antibody (green). Melanophilin/MLPH was detected in an immunocytochemical section of cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-MLPH antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of Melanophilin/MLPH using anti-MLPH antibody. Lane 1: human MCF-7 whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human PC-3 whole cell 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-MLPH antibody at 0.25 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. MLPH western blot shows a predominant band at ~85 kDa with adjacent upper and lower species. Although the theoretical mass is ~66 kDa, melanophilin commonly migrates higher due to phosphorylation and its low-complexity scaffold architecture; neighboring bands likely reflect differential modification states and minor proteolysis.

Description

MLPH antibody detects Melanophilin, a Rab effector protein that regulates melanosome transport and distribution within pigment cells. Encoded by the MLPH gene on chromosome 2q37.3, this protein functions as an adaptor linking Rab27A and myosin Va to form a tripartite complex essential for actin-based organelle transport. Melanophilin ensures that pigment-containing melanosomes are properly positioned within melanocytes for uniform pigment dispersion and transfer to keratinocytes.

Structurally, Melanophilin is a 590-amino-acid cytoplasmic protein of approximately 67 kilodaltons containing an N-terminal Rab27A-binding domain, a central actin- and myosin Va-interacting region, and a C-terminal coiled-coil domain that stabilizes the tripartite complex. This structural organization enables MLPH to bridge the small GTPase Rab27A and the motor protein myosin Va, coordinating microtubule and actin-based transport systems. In pigment cells, MLPH localizes to melanosome membranes and cortical actin filaments where it regulates vesicle tethering and release.

The MLPH antibody is widely used in cell biology, dermatology, and neurobiology research to study vesicle trafficking, motor protein coordination, and pigment cell organization. Western blot analysis detects a 67 kilodalton band corresponding to Melanophilin, while immunofluorescence reveals peripheral punctate staining in melanocytes, consistent with melanosomal distribution. This antibody is ideal for examining organelle transport mechanisms and intracellular vesicle dynamics in epithelial and neuronal systems.

Mutations in MLPH cause Griscelli syndrome type 3, a rare pigmentation disorder characterized by hypopigmentation and abnormal melanosome aggregation due to disrupted melanosome transport. Functional studies show that loss of MLPH leads to perinuclear melanosome clustering, highlighting its importance in vesicle tethering to the actin cytoskeleton. Beyond pigmentation, MLPH has been implicated in secretory vesicle dynamics in non-pigment cell types, suggesting a broader role in vesicle trafficking and cytoskeletal coupling. The MLPH antibody provides a reliable tool for characterizing this transport system and investigating the molecular basis of vesicle transport defects. NSJ Bioreagents validates this antibody for its applications, ensuring high specificity and reproducibility for vesicle trafficking and cytoskeletal research.

Application Notes

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

Immunogen

E.coli-derived human Melanophilin/MLPH recombinant protein (Position: E61-L523) was used as the immunogen for the MLPH antibody.

Storage

After reconstitution, the MLPH 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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