

RHOT2 Antibody / Rho GTPase 2 / MIRO2 (FY12358)

Catalog No.	Formulation	Size
FY12358	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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 Na ₂ HPO ₄ .
UniProt	Q8IXI1
Applications	ELISA : 0.1-0.5ug/ml Flow Cytometry : 1-3ug/million cells Immunoprecipitation : 2-4ug/500ug of lysate Immunofluorescence : 5ug/ml Immunohistochemistry : 2-5ug/ml Immunocytochemistry : 5ug/ml Western Blot : 0.25-0.5ug/ml
Limitations	This RHOT2 antibody is available for research use only.

Description

The RHOT2 antibody targets Mitochondrial Rho GTPase 2, a small GTP-binding protein encoded by the RHOT2 gene. Also known as Miro2, this protein is anchored to the outer mitochondrial membrane and regulates mitochondrial trafficking, dynamics, and calcium signaling. Mitochondrial Rho GTPase 2 interacts with adaptors such as TRAK1 and kinesin motor proteins to mediate mitochondrial transport along microtubules. The RHOT2 antibody enables detailed analysis of mitochondrial movement, morphology, and positioning within cells under physiological and pathological conditions.

Mitochondrial Rho GTPase 2 is part of the Miro family, which also includes RHOT1 (Miro1). Both proteins contain two GTPase domains and two calcium-binding EF-hand motifs that sense cytosolic calcium levels to control organelle motility. Under elevated calcium conditions, RHOT2 disengages mitochondria from microtubule motors, halting transport and localizing organelles near energy-demanding sites. The RHOT2 antibody is essential for studying these regulatory events

and mapping mitochondrial dynamics during cell stress, differentiation, and neuronal signaling.

Defects in RHOT2-mediated transport are linked to neurodegenerative disorders such as Parkinson's disease and Charcot-Marie-Tooth disease. Impaired mitochondrial motility can disrupt energy distribution, leading to axonal degeneration and synaptic dysfunction. The RHOT2 antibody provides a means to measure protein expression in neuronal tissues and to investigate molecular mechanisms that couple mitochondrial movement with cellular signaling pathways. By examining Mitochondrial Rho GTPase 2 expression, researchers gain insight into how mitochondrial positioning influences metabolism and neuroprotection.

In addition to its transport role, Mitochondrial Rho GTPase 2 contributes to mitochondrial quality control and mitophagy. It interacts with the E3 ubiquitin ligase Parkin and participates in PINK1-Parkin-mediated degradation of damaged mitochondria. The RHOT2 antibody allows visualization of these processes in cellular models of mitochondrial dysfunction, facilitating research into the molecular pathology of Parkinsonian syndromes and mitochondrial diseases. Furthermore, altered RHOT2 expression has been associated with metabolic stress and cancer cell survival, underscoring its broader physiological importance.

The RHOT2 antibody is suitable for use in western blotting, immunofluorescence microscopy, and immunohistochemistry. It produces a distinct mitochondrial staining pattern, enabling analysis of organelle distribution and morphology. NSJ Bioreagents provides the RHOT2 antibody as a validated and high-performance reagent for mitochondrial research. By offering reliable detection of Mitochondrial Rho GTPase 2, this antibody advances studies of organelle transport, cellular bioenergetics, and mitochondrial homeostasis in health and disease.

Application Notes

Optimal dilution of the RHOT2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human MIRO2/RHOT2 recombinant protein (Position: D321-V615) was used as the immunogen for the RHOT2 antibody.

Storage

After reconstitution, the RHOT2 antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.