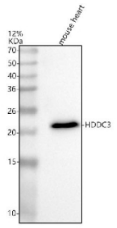
HDDC3 Antibody / HD domain-containing protein 3 (FY13167)

Catalog No.	Formulation	Size
FY13167	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	Q8N4P3
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This HDDC3 antibody is available for research use only.



Western blot analysis of HDDC3 using anti-HDDC3 antibody. Lane 1: 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-HDDC3 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. The expected molecular weight of HDDC3 is ~20 kDa.

Description

HDDC3 antibody detects HD domain-containing protein 3, a mitochondrial enzyme involved in NAD metabolism and stress-induced apoptosis regulation. The UniProt recommended name is HD domain-containing protein 3 (HDDC3). Also known as mitochondrial stress response protein MESH1, this enzyme exhibits NADPH phosphatase activity and modulates cellular redox state during stress adaptation.

Functionally, HDDC3 antibody identifies a 246-amino-acid protein localized to the mitochondrial matrix and cytoplasm. HDDC3 hydrolyzes NADPH to NADP+, regulating redox balance and reactive oxygen species production. It serves as a mammalian homolog of bacterial stringent response hydrolases, linking metabolic control to cell survival and autophagy.

The HDDC3 gene is located on chromosome 9q21.12 and is widely expressed, with highest levels in liver, kidney, and brain. Under oxidative or nutrient stress, HDDC3 modulates mitochondrial function, suppresses excessive NADPH accumulation, and contributes to redox homeostasis.

Pathologically, dysregulation of HDDC3 affects metabolic stress responses and apoptosis. Loss of function sensitizes cells to oxidative damage, while overexpression has been associated with tumor progression and altered NADPH signaling. Research using HDDC3 antibody supports studies in metabolism, mitochondrial dynamics, and cell death pathways.

HDDC3 antibody is validated for western blotting, immunofluorescence, and immunohistochemistry to detect NADPH-regulating enzymes. NSJ Bioreagents provides HDDC3 antibody reagents optimized for studies in mitochondrial metabolism, apoptosis, and redox biology.

Structurally, HD domain-containing protein 3 contains a conserved metal-dependent hydrolase domain that coordinates divalent cations for catalysis. This antibody enables analysis of HDDC3's enzymatic role in maintaining redox equilibrium and mitochondrial resilience.

Application Notes

Optimal dilution of the HDDC3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human HDDC3 recombinant protein (Position: K25-I179) was used as the immunogen for the HDDC3 antibody.

Storage

After reconstitution, the HDDC3 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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