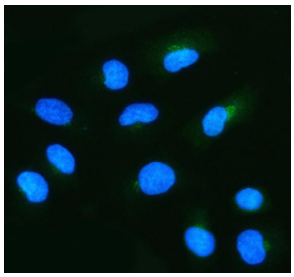
NUDT9 Antibody / ADP-ribose pyrophosphatase (FY12911)

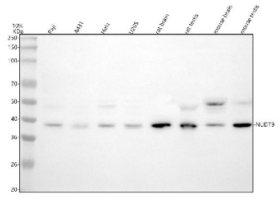
Catalog No.	Formulation	Size
FY12911	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

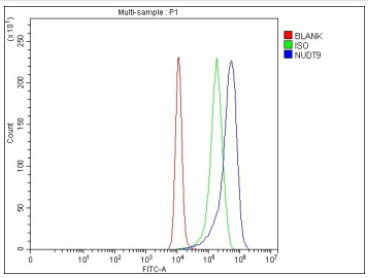
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9BW91
Localization	Cytoplasm (Mitochondria)
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This NUDT9 antibody is available for research use only.



Immunofluorescent staining of NUDT9 using anti-NUDT9 antibody (green). NUDT9 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-NUDT9 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 NUDT9 using anti-NUDT9 antibody. Lane 1: human Raji whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: human U20S whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat testis tissue lysates, Lane 7: mouse brain tissue lysates, Lane 8: 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-NUDT9 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. A specific band was detected for NUDT9 at approximately 39 kDa. The expected molecular weight of NUDT9 is ~39 kDa.



Flow Cytometry analysis of cells using anti-NUDT9 antibody. Overlay histogram showing 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-NUDT9 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 without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

NUDT9 antibody detects ADP-ribose pyrophosphatase, a member of the nudix hydrolase family that hydrolyzes ADP-ribose into AMP and ribose-5-phosphate, maintaining intracellular nucleotide balance. Encoded by the NUDT9 gene on chromosome 4q22.1, this enzyme regulates ADP-ribose metabolism and contributes to NAD+ turnover, calcium signaling, and oxidative stress responses. NUDT9 ensures proper degradation of ADP-ribose derived from poly(ADP-ribose) polymerase (PARP) activity following DNA damage.

Structurally, NUDT9 is a 350-amino-acid mitochondrial enzyme of approximately 40 kilodaltons containing a conserved Nudix box motif (GX5EXEEAXEE) that coordinates magnesium ions for catalytic hydrolysis of ADP-ribose. The enzyme localizes primarily to mitochondria and cytoplasm, where it prevents accumulation of free ADP-ribose that could perturb energy metabolism and calcium homeostasis. Its enzymatic activity helps recycle components of NAD+ metabolism and mitigate oxidative stress.

The NUDT9 antibody is widely used in biochemistry, metabolism, and mitochondrial biology research to study nucleotide turnover, ADP-ribose signaling, and cellular energy regulation. Western blot analysis detects a 40 kilodalton band corresponding to NUDT9, while immunofluorescence reveals mitochondrial and cytosolic localization. This antibody supports studies exploring enzymatic regulation of NAD+ pathways and mitochondrial nucleotide dynamics.

Functionally, NUDT9 plays a protective role against oxidative stress by regulating levels of ADP-ribose, a molecule that can activate TRPM2 channels and trigger calcium influx during stress responses. Dysregulation of NUDT9 expression affects calcium signaling, redox balance, and cell viability. Homologous enzymes and domains, such as those found in the TRPM2 channel, share structural similarity with NUDT9 and extend its functional relevance to ion channel regulation. The NUDT9 antibody provides a sensitive reagent for investigating nucleotide metabolism, mitochondrial stress adaptation, and PARP-related signaling. NSJ Bioreagents validates this antibody for its applications, ensuring accurate detection for cellular metabolism research.

Application Notes

Optimal dilution of the NUDT9 antibody should be determined by the researcher.

Immunogen

E.coli-derived human NUDT9 recombinant protein (Position: R4-L350) was used as the immunogen for the NUDT9 antibody.

Storage

After reconstitution, the NUDT9 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.