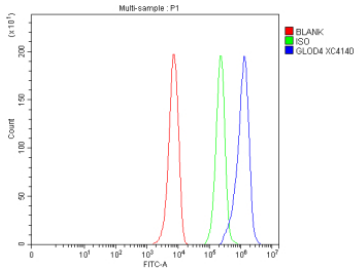
GLOD4 Antibody / Glyoxalase domain-containing protein 4 (FY12318)

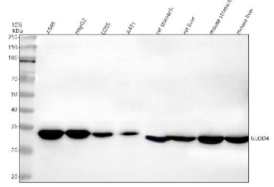
Catalog No.	Formulation	Size
FY12318	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q9HC38
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This GLOD4 antibody is available for research use only.



Flow Cytometry analysis of HepG2 cells using anti-GLOD4 antibody. Overlay histogram showing HepG2 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-GLOD4 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.



Western blot analysis of GLOD4 using anti-GLOD4 antibody. Lane 1: human whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human U2OS whole cell lysates, Lane 4: human whole cell lysates, Lane 5: rat stomach tissue lysates, Lane 6: rat liver tissue lysates, Lane 7: mouse stomach tissue lysates, Lane 8: mouse liver 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-GLOD4 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 GLOD4 is ~35 kDa.

Description

GLOD4 antibody detects Glyoxalase domain-containing protein 4, encoded by the GLOD4 gene on chromosome 17q25.3. GLOD4 antibody is widely applied in metabolism, detoxification, and mitochondrial biology research. Although GLOD4's precise enzymatic role remains incompletely defined, it contains homology to glyoxalase enzymes, which detoxify reactive dicarbonyls such as methylglyoxal, a byproduct of glycolysis.

Structurally, GLOD4 is a ~36 kDa protein with a glyoxalase-like fold. It is predicted to bind metal ions that assist catalysis, though definitive enzymatic activity has yet to be confirmed. Localization studies suggest enrichment in mitochondria, highlighting a role in redox balance and metabolic regulation.

Functionally, GLOD4 may protect cells from glycation stress by metabolizing reactive aldehydes. Its expression is broad, with higher levels in metabolic tissues such as liver, kidney, and muscle. Researchers use GLOD4 antibody to study mitochondrial metabolism, detoxification pathways, and oxidative stress responses.

Clinically, altered GLOD4 expression has been observed in cancer and metabolic disease. By influencing redox balance, GLOD4 may contribute to tumor survival under stress conditions. It is under investigation as a metabolic biomarker and therapeutic target. NSJ Bioreagents provides GLOD4 antibody for metabolic, mitochondrial, and cancer research.

Experimentally, GLOD4 antibody is applied in western blotting to detect the ~36 kDa protein, in immunofluorescence microscopy to study mitochondrial localization, and in immunohistochemistry to assess expression across tissues. Functional studies combining GLOD4 antibody with metabolic assays help clarify its enzymatic role in glyoxalase pathways.

Application Notes

Optimal dilution of the GLOD4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GLOD4 recombinant protein (Position: E57-G313) was used as the immunogen for the GLOD4 antibody.

Storage

After reconstitution, the GLOD4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.