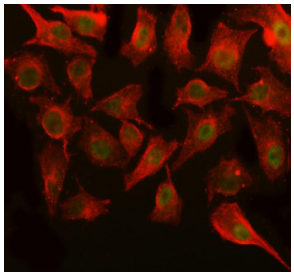
OGFOD3 Antibody / 2-Oxoglutarate and iron-dependent oxygenase domain-containing protein 3 (FY12709)

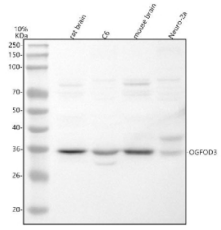
Catalog No.	Formulation	Size
FY12709	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

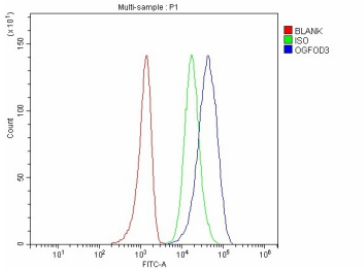
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q6PK18
Localization	Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This OGFOD3 antibody is available for research use only.



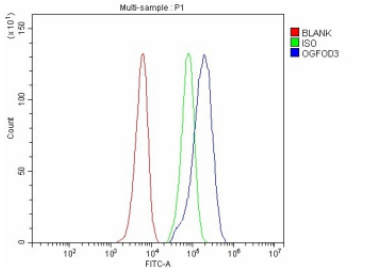
Immunofluorescent staining of OGFOD3 using anti-OGFOD3 antibody (green) and anti-Beta Tubulin antibody (red). OGFOD3 was detected in immunocytochemical section of cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-OGFOD3 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and DyLight 594 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



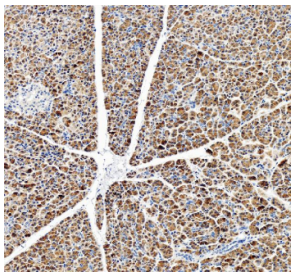
Western blot analysis of OGFOD3 using anti-OGFOD3 antibody. Lane 1: rat brain tissue lysates, Lane 2: rat C6 whole cell lysates, Lane 3: mouse brain tissue lysates, Lane 4: mouse Neuro-2a whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-OGFOD3 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 OGFOD3 at approximately 36 kDa. The expected molecular weight of OGFOD3 is ~36 kDa.



Flow Cytometry analysis of MOLT-4 cells using anti-OGFOD3 antibody. Overlay histogram showing MOLT-4 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-OGFOD3 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.



Flow Cytometry analysis of SiHa cells using anti-OGFOD3 antibody. Overlay histogram showing SiHa cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-OGFOD3 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.



Immunohistochemical staining of OGFOD3 using anti-OGFOD3 antibody. OGFOD3 was detected in a paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-OGFOD3 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.

Description

OGFOD3 antibody detects 2-oxoglutarate and iron-dependent oxygenase domain-containing protein 3, a member of the 2OG/Fe(II)-dependent dioxygenase superfamily involved in protein hydroxylation and cellular stress regulation. Encoded by the OGFOD3 gene on chromosome 1p22.2, this small nuclear protein contains a conserved dioxygenase domain that utilizes 2-oxoglutarate and Fe2+ as cofactors for oxidative catalysis. Although its exact substrates remain under investigation, OGFOD3 is thought to participate in hydroxylation of ribosomal and transcriptional proteins, influencing translation fidelity and stress responses. This family of enzymes links oxygen and nutrient availability to cellular metabolism and gene expression through oxygen-dependent modification reactions.

OGFOD3 is expressed in most tissues, with notable enrichment in the brain, testis, and liver. Localization studies show nuclear distribution with occasional cytoplasmic presence, suggesting roles in both nuclear signaling and translational control. Comparative genomics indicates that OGFOD3 shares structural similarity with OGFOD1, an enzyme known to hydroxylate ribosomal protein RPS23, implying potential overlap in function. The OGFOD3 antibody is used to investigate dioxygenase-mediated post-translational modifications and the cellular response to oxidative or metabolic stress.

Although less characterized than its paralogs, OGFOD3 has been linked to cellular stress pathways and protein biosynthesis. Studies show that depletion of OGFOD3 alters ribosomal activity and activates integrated stress response signaling. In cancer research, OGFOD3 expression is dysregulated in several tumor types, including lung and colon carcinomas, where it may influence adaptation to hypoxia or nutrient deprivation. The OGFOD3 antibody allows researchers to detect expression changes under stress conditions and to localize the protein within cells using immunocytochemical or immunofluorescent assays. Western blot analysis identifies a 38 kilodalton band corresponding to the full-length protein.

In the context of oxygen sensing and translational control, OGFOD3 may coordinate with other 2OG oxygenases to maintain homeostasis during metabolic shifts. It potentially affects protein synthesis by modifying translation factors or ribosomal subunits, modulating global translational output in response to stress. NSJ Bioreagents provides the OGFOD3 antibody validated for western blotting, immunohistochemistry, and immunofluorescence, enabling accurate detection and characterization of this emerging regulatory enzyme in studies of oxygen-dependent signaling and metabolism.

Application Notes

Optimal dilution of the OGFOD3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human OGFOD3 recombinant protein (Position: D67-H311) was used as the immunogen for the OGFOD3 antibody.

Storage

After reconstitution, the OGFOD3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.