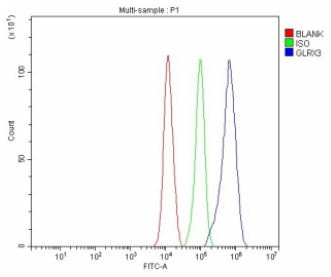
GLRX3 Antibody / Glutaredoxin 3 / PICOT (FY12722)

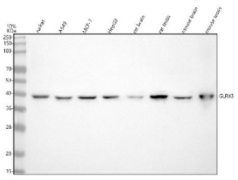
Catalog No.	Formulation	Size
FY12722	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	O76003
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This GLRX3 antibody is available for research use only.



Flow Cytometry analysis of JK cells using anti-GLRX3 antibody. Overlay histogram showing JK 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-GLRX3 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 GLRX3 using anti-GLRX3 antibody. Lane 1: human Jurkat whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human MCF-7 whole cell lysates, Lane 4: human HepG2 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-GLRX3 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 GLRX3 is ~37 kDa.

Description

GLRX3 antibody detects Glutaredoxin-3 (also known as PICOT or Thioredoxin-like protein 2), a multifunctional redox enzyme that regulates cellular redox homeostasis, iron-sulfur cluster assembly, and signal transduction. Encoded by the GLRX3 gene on chromosome 10q26.3, this protein belongs to the glutaredoxin family, characterized by their thiol-disulfide oxidoreductase activity. GLRX3 contains two monothiol glutaredoxin domains that utilize glutathione to catalyze reversible thiol exchange reactions, thereby maintaining protein thiol status and redox balance. Beyond redox control, GLRX3 acts as a scaffold protein for Fe-S cluster delivery and as a modulator of intracellular signaling cascades.

GLRX3 is ubiquitously expressed but particularly abundant in heart, skeletal muscle, and liver, where it contributes to mitochondrial function and oxidative stress resistance. The protein forms complexes with BolA-like proteins to facilitate Fe-S cluster biogenesis, which is essential for electron transport chain integrity. In cardiomyocytes, GLRX3Ã¯Â¿Â½originally identified as PICOT (PKC-interacting cousin of thioredoxin)Ã¯Â¿Â½binds to protein kinase C theta and inhibits its activity, modulating hypertrophic signaling and contractility. This redox-regulatory interaction links GLRX3 to cardiac protection against oxidative damage and maladaptive stress responses.

The GLRX3 antibody is widely used in redox biology, metabolism, and cardiovascular research to examine oxidative stress regulation, Fe-S cluster metabolism, and cell signaling. Western blot analysis identifies a 38 kilodalton band corresponding to GLRX3, while immunofluorescence shows cytoplasmic and mitochondrial localization. Studies using the antibody have revealed that GLRX3 depletion leads to increased ROS levels, impaired mitochondrial respiration, and reduced iron homeostasis. Because these effects contribute to cellular senescence and disease progression, GLRX3 is of growing interest as a therapeutic target in oxidative and metabolic disorders.

Beyond its roles in redox and energy metabolism, GLRX3 contributes to developmental processes and immune function. It modulates NF-?B and MAPK pathways, influencing inflammatory gene expression. Overexpression has been reported in cancers such as hepatocellular carcinoma and breast carcinoma, where it promotes proliferation and resistance to oxidative stress. The GLRX3 antibody therefore provides a valuable reagent for investigating molecular mechanisms of redox regulation, signal transduction, and disease adaptation. NSJ Bioreagents supplies this antibody validated for its applications, ensuring high specificity and reproducibility for both basic and translational research applications.

Application Notes

Optimal dilution of the GLRX3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human GLRX3 recombinant protein (Position: K31-V307) was used as the immunogen for the GLRX3 antibody.

Storage

After reconstitution, the GLRX3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at

-20oC. Avoid repeated freezing and thawing.