

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. |

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 FeS cluster biogenesis, which is essential for electron transport chain integrity. In cardiomyocytes, GLRX3—originally identified as PICOT (PKC-interacting cousin of thioredoxin)—binds 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 western blotting, immunofluorescence, and immunohistochemistry, 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.