

GSTO1 Antibody / Glutathione S-transferase omega 1 (FY12525)

Catalog No.	Formulation	Size
FY12525	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	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	O09131
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Flow Cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This GSTO1 antibody is available for research use only.

Description

GSTO1 antibody detects Glutathione S-transferase omega-1, an enzyme belonging to the omega class of the glutathione transferase family. GSTO1 catalyzes reduction reactions and participates in antioxidant defense, detoxification, and redox homeostasis. Unlike classical GSTs, GSTO1 possesses dehydroascorbate reductase and deglutathionylase activities, enabling control of oxidative stress and protein thiol status. The GSTO1 antibody is widely used to study redox signaling, neurodegeneration, and inflammation.

GSTO1 is encoded by the GSTO1 gene located on human chromosome 10q25.1. The protein is approximately 28 kilodaltons and features a cysteine residue in the active site instead of the usual serine or tyrosine found in other GSTs. This cysteine enables formation of mixed disulfides with substrates, granting GSTO1 unique catalytic and regulatory properties. The enzyme is mainly cytosolic but can associate with mitochondria and the endoplasmic reticulum during oxidative stress.

The GSTO1 antibody identifies a 28 kilodalton band in western blot analysis and shows cytoplasmic distribution with enrichment in stress-responsive cells. GSTO1 reduces dehydroascorbate to ascorbic acid, maintaining vitamin C pools,

and catalyzes deglutathionylation of oxidized proteins to restore function. It also contributes to mercury detoxification and participates in inflammatory signaling through modulation of interleukin-1beta processing.

Variants in GSTO1 have been associated with altered susceptibility to Alzheimer's disease, Parkinson's disease, and certain cancers. By regulating redox balance and apoptosis, GSTO1 influences cellular survival and aging processes. Elevated expression is often observed in tumors and immune cells undergoing oxidative stress, whereas inhibition sensitizes cells to reactive oxygen species-induced death.

GSTO1 is an important biomarker for antioxidant capacity and inflammatory regulation. Its enzymatic versatility links metabolism, detoxification, and immunity. NSJ Bioreagents provides a validated GSTO1 antibody optimized for western blot, immunofluorescence, and oxidative stress studies, supporting research into redox signaling, metabolic adaptation, and neuroinflammation.

Application Notes

Optimal dilution of the GSTO1 antibody should be determined by the researcher.

Immunogen

E.coli-derived mouse GSTO1 recombinant protein (Position: E91-L240) was used as the immunogen for the GSTO1 antibody.

Storage

After reconstitution, the GSTO1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.