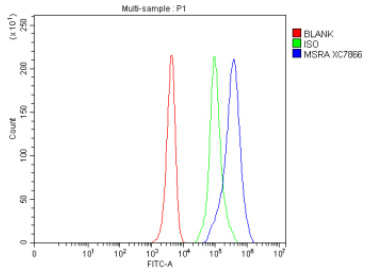
MSRA Antibody / Methionine sulfoxide reductase A (FY12909)

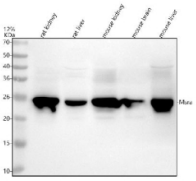
Catalog No.	Formulation	Size
FY12909	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q9D6Y7
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This MSRA antibody is available for research use only.



Flow Cytometry analysis of mouse HEPA1-6 cells using anti-MSRA antibody. Overlay histogram showing HEPA1-6 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-MSRA 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 MSRA using anti-MSRA antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat kidney tissue lysates, Lane 2: rat liver tissue lysates, Lane 3: mouse kidney tissue lysates, Lane 4: mouse brain tissue lysates, Lane 5: 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-MSRA 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 an ECL Plus Western Blotting Substrate. The expected molecular weight of MSRA is ~26 kDa.

Description

MSRA antibody detects Methionine sulfoxide reductase A, a key antioxidant enzyme that repairs oxidized methionine residues in proteins, restoring their function and protecting cells from oxidative stress. Encoded by the MSRA gene on chromosome 8p23.1, this enzyme belongs to the methionine sulfoxide reductase family and plays an essential role in maintaining protein integrity and cellular redox balance. By catalyzing the reduction of methionine-S-sulfoxide back to methionine, MSRA reverses oxidative damage caused by reactive oxygen species (ROS).

Structurally, MSRA is a 235-amino-acid protein of approximately 26 kilodaltons containing a thioredoxin-like catalytic domain with a conserved cysteine residue essential for redox cycling. It exists in multiple isoforms localized to cytosolic, mitochondrial, and peroxisomal compartments, ensuring broad cellular protection. The enzyme utilizes thioredoxin as an electron donor, enabling reduction of oxidized methionine residues in structural and metabolic proteins.

The MSRA antibody is widely used in oxidative stress, neurodegeneration, and aging research to study redox regulation, protein repair, and cellular stress defense. Western blot analysis detects a 26 kilodalton band corresponding to MSRA, while immunofluorescence shows strong cytoplasmic and mitochondrial staining. This antibody provides a powerful tool for analyzing antioxidant defense systems and understanding how methionine oxidation influences cellular resilience and disease processes.

Functionally, MSRA contributes to cellular longevity by maintaining the functionality of oxidatively damaged proteins, particularly in mitochondria where ROS production is high. It has been implicated in protecting against neurodegenerative disorders, cardiovascular diseases, and metabolic stress. Loss of MSRA activity accelerates protein oxidation and mitochondrial dysfunction, whereas its overexpression enhances stress tolerance and lifespan in model organisms. The MSRA antibody supports research into oxidative repair mechanisms, antioxidant therapeutics, and the molecular basis of redox regulation. NSJ Bioreagents validates this antibody for its applications, ensuring accuracy in studies of protein oxidation and repair.

Application Notes

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

Immunogen

E.coli-derived mouse MSRA recombinant protein (Position: M1-D215) was used as the immunogen for the MSRA antibody.

Storage

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