



MsrA (1C8): sc-59619

BACKGROUND

Protein-bound methionine residues are among the most susceptible to oxidative stress by biological reactive oxygen species (ROS) such as H₂O₂, hydroxyl radicals and superoxide ions, which result in the formation of methionine sulfoxide, or Met(O). Methionine sulfoxide reductase (MsrA) is an enzyme that catalyzes the thioredoxin-dependent reduction of Met(O) residues in proteins and in methyl sulfoxide compounds. MsrA is an ubiquitously expressed protein which is found in organisms from yeast to man. Mammalian MsrA is most highly expressed in liver, kidney, macrophages, neutrophils, cerebellum and brain neurons. Oxidation of proteins by ROS is associated with oxidative stress and age-related diseases such as Alzheimer's disease. Recombinant mammalian MsrA retains enzymatic activity, and overexpression of the protein in yeast and human T cells increases their resistance to oxidative stress. Furthermore, MsrA activity decreases in all regions of the Alzheimer's disease brain. These findings indicate that MsrA plays an important role in protecting cells against oxidative damage and early cell death.

REFERENCES

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4. Kuschel, L., et al. 1999. Molecular cloning and functional expression of a human peptide methionine sulfoxide reductase (hMsrA). *FEBS Lett.* 456: 17-21.
5. Gabbita, S., et al. 1999. Decrease in peptide methionine sulfoxide reductase in Alzheimer's disease brain. *J. Neurochem.* 73: 1660-1666.
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7. Moskovitz, J., et al. 2001. Methionine sulfoxide reductase (MsrA) is a regulator of antioxidant defense and lifespan in mammals. *Proc. Natl. Acad. Sci. USA* 98: 12920-12925.
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CHROMOSOMAL LOCATION

Genetic locus: MSRA (human) mapping to 8p23.1; Msra (mouse) mapping to 14 D1.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SOURCE

MsrA (1C8) is a mouse monoclonal antibody raised against full length MsrA of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MsrA (1C8) is recommended for detection of MsrA of mouse, rat and human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MsrA siRNA (h): sc-72126, MsrA siRNA (m): sc-72127, MsrA shRNA Plasmid (h): sc-72126-SH, MsrA shRNA Plasmid (m): sc-72127-SH, MsrA shRNA (h) Lentiviral Particles: sc-72126-V and MsrA shRNA (m) Lentiviral Particles: sc-72127-V.

Molecular Weight of MsrA: 26 kDa.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.