SANTA CRUZ BIOTECHNOLOGY, INC.

MsrB2 (B-12): sc-515088

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Methionine is one of the most readily oxidized essential amino acids and an intermediate in the biosynthesis of cysteine, carnitine, taurine, lecithin, phosphatidylcholine and other phospholipids. In its oxidative state, Methionine is regulated *in vivo* by methionine sulfoxide reductases (Msr). MsrB2 (methionine sulfoxide reductase B2), also known as CBS1, MSRB, PILB, CBS-1 or CGI-131, is a 182 amino acid mitochondrial protein that is ubiquitously expressed. Belonging to the MsrB Met sulfoxide reductase family, MsrB2 acts as a catalyst for the reduction of free and protein-bound methionine sulfoxide to methionine. Upon oxidative stress, MsrB2 is suggested to play a role in the preservation of mitochondrial integrity by decreasing the intracellular reactive oxygen species build-up through its scavenging role, hence contributing to cell survival and protein maintenance. MsrB2 utilizes zinc ions, one per subunit, as cofactors.

REFERENCES

1. Huang, W., et al. 1999. Identification, expression and chromosome localization of a human gene encoding a novel protein with similarity to the pilB family of transcriptional factors (pilin) and to bacterial peptide methionine sulfoxide reductases. Gene 233: 233-240.
2. Marchetti, M.A., et al. 2005. Methionine sulfoxide reductases B1, B2, and B3 are present in the human lens and confer oxidative stress resistance to lens cells. Invest. Ophthalmol. Vis. Sci. 46: 2107-2112.
3. Cabreiro, F., et al. 2006. Methionine sulfoxide reductases: relevance to aging and protection against oxidative stress. Ann. N.Y. Acad. Sci. 1067: 37-44.
4. Binger, K.J., et al. 2008. Methionine oxidation inhibits assembly and promotes disassembly of apolipoprotein C-II amyloid fibrils. Biochemistry 47: 10208-10217.

CHROMOSOMAL LOCATION

Genetic locus: MSRB2 (human) mapping to 10p12.2.

SOURCE

MsrB2 (B-12) is a mouse monoclonal antibody raised against amino acids 70-111 mapping within an internal region of MsrB2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MsrB2 (B-12) is available conjugated to agarose (sc-515088 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515088 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515088 PE), fluorescein (sc-515088 FITC), Alexa Fluor® 488 (sc-515088 AF488), Alexa Fluor® 546 (sc-515088 AF546), Alexa Fluor® 594 (sc-515088 AF594) or Alexa Fluor® 647 (sc-515088 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515088 AF680) or Alexa Fluor® 790 (sc-515088 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MsrB2 (B-12) is recommended for detection of MsrB2 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MsrB2 siRNA (h): sc-90627, MsrB2 shRNA Plasmid (h): sc-90627-SH and MsrB2 shRNA (h) Lentiviral Particles: sc-90627-V.

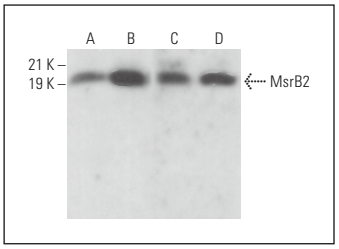
Molecular Weight of MsrB2: 20 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, MDA-MB-231 cell lysate: sc-2232 or human heart extract: sc-363763.

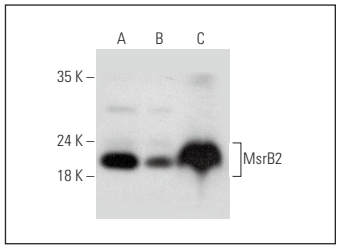
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MsrB2 (B-12): sc-515088. Western blot analysis of MsrB2 expression in MCF7 (**A**), MDA-MB-231 (**B**), SJRH30 (**C**) and HeLa (**D**) whole cell lysates. Detection reagent used: m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM.



MsrB2 (B-12): sc-515088. Western blot analysis of MsrB2 expression in MCF7 (**A**) and MDA-MB-231 (**B**) whole cell lysates and human heart tissue extract (**C**).

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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