

# Selenoprotein M (C-3): sc-514952

## BACKGROUND

Selenium is an essential trace element that is incorporated as selenocysteine into the primary structure of selenoproteins. Nutritional deficiency of selenium decreases selenoprotein concentrations and leads to pathologic conditions. Most of the known selenoproteins are members of the glutathione peroxidase or iodothyronine deiodinase families. Selenoprotein M, also designated SELM or SEPM, is a 145 amino acid protein suggested to act as a thiol-disulfide oxidoreductase during disulfide bond formation that contains a selenocysteine (Sec) residue at its active site. Widely expressed, Selenoprotein M is a member of the Selenoprotein M/SEP15 family and localizes to perinuclear structures of the endoplasmic reticulum and Golgi apparatus. Selenoprotein M is highly expressed in brain, with moderate to low levels found in uterus, kidney, placenta, lung, stomach, heart, skin, testis and small intestine. Selenoprotein M may have a functional role in catalyzing free radicals, and has been associated with Alzheimer's disease.

## REFERENCES

1. Kryukov, G.V., et al. 1999. New mammalian selenocysteine-containing proteins identified with an algorithm that searches for selenocysteine insertion sequence elements. *J. Biol. Chem.* 274: 33888-33897.
2. Korotkov, K.V., et al. 2002. Mammalian selenoprotein in which selenocysteine (Sec) incorporation is supported by a new form of Sec insertion sequence element. *Mol. Cell. Biol.* 22: 1402-1411.
3. Driscoll, D.M. and Copeland, P.R. 2003. Mechanism and regulation of selenoprotein synthesis. *Annu. Rev. Nutr.* 23: 17-40.

## CHROMOSOMAL LOCATION

Genetic locus: SELENOM (human) mapping to 22q12.2; Selenom (mouse) mapping to 11 A1.

## SOURCE

Selenoprotein M (C-3) is a mouse monoclonal antibody raised against amino acids 29-145 mapping at the C-terminus of Selenoprotein M of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Selenoprotein M (C-3) is available conjugated to agarose (sc-514952 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514952 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514952 PE), fluorescein (sc-514952 FITC), Alexa Fluor® 488 (sc-514952 AF488), Alexa Fluor® 546 (sc-514952 AF546), Alexa Fluor® 594 (sc-514952 AF594) or Alexa Fluor® 647 (sc-514952 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514952 AF680) or Alexa Fluor® 790 (sc-514952 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

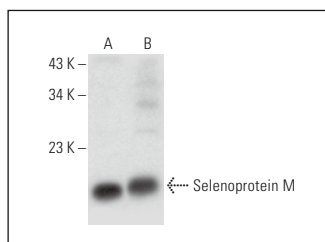
Selenoprotein M (C-3) is recommended for detection of Selenoprotein M of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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 Selenoprotein M siRNA (h): sc-76470, Selenoprotein M siRNA (m): sc-153327, Selenoprotein M shRNA Plasmid (h): sc-76470-SH, Selenoprotein M shRNA Plasmid (m): sc-153327-SH, Selenoprotein M shRNA (h) Lentiviral Particles: sc-76470-V and Selenoprotein M shRNA (m) Lentiviral Particles: sc-153327-V.

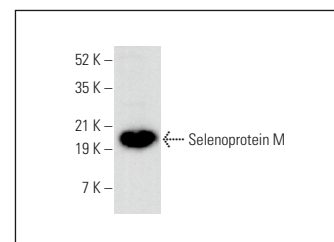
Molecular Weight of Selenoprotein M: 16 kDa.

Positive Controls: human stomach extract: sc-363780, WI-38 whole cell lysate: sc-364260 or human ovary extract: sc-363769.

## DATA



Selenoprotein M (C-3): sc-514952. Western blot analysis of Selenoprotein M expression in human stomach (A) and human ovary (B) tissue extracts.



Selenoprotein M (C-3): sc-514952. Western blot analysis of Selenoprotein M expression in WI-38 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Sasuclark, A.R., et al. 2019. Cell-type specific analysis of selenium-related genes in brain. *Antioxidants* 8: 120.
2. Gong, T., et al. 2021. Selenoprotein M promotes hypothalamic leptin signaling and thioredoxin antioxidant activity. *Antioxid. Redox Signal.* 35: 775-787.
3. Zhang, Z., et al. 2021. Selenium restores synaptic deficits by modulating NMDA receptors and selenoprotein K in an Alzheimer's disease model. *Antioxid. Redox Signal.* 35: 863-884.
4. Li, Z., et al. 2022. Ribosome stalling during selenoprotein translation exposes a ferroptosis vulnerability. *Nat. Chem. Biol.* 18: 751-761.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.