

# Selenoprotein M (E-16): sc-86854

## 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.

## REFERENCES

1. Kryukov, G.V., Kryukov, V.M. and Gladyshev, V.N. 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., Novoselov, S.V., Hatfield, D.L. and Gladyshev, V.N. 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.
4. Kryukov, G.V., Castellano, S., Novoselov, S.V., Lobanov, A.V., Zehtab, O., Guigó, R. and Gladyshev, V.N. 2003. Characterization of mammalian selenoproteomes. *Science* 300: 1439-1443.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610918. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Boitani, C. and Puglisi, R. 2008. Selenium, a key element in spermatogenesis and male fertility. *Adv. Exp. Med. Biol.* 636: 65-73.
7. Carlson, B.A., Yoo, M.H., Sano, Y., Sengupta, A., Kim, J.Y., Irons, R., Gladyshev, V.N., Hatfield, D.L. and Park, J.M. 2009. Selenoproteins regulate macrophage invasiveness and extracellular matrix-related gene expression. *BMC Immunol.* 10: 57.
8. Papp, L.V., Holmgren, A. and Khanna, K.K. 2010. Selenium and selenoproteins in health and disease. *Antioxid. Redox Signal.* 12: 793-795.
9. Arner, E.S. 2010. Selenoproteins-What unique properties can arise with selenocysteine in place of cysteine? *Exp. Cell Res.* E-published.

## CHROMOSOMAL LOCATION

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

## STORAGE

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

## SOURCE

Selenoprotein M (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Selenoprotein M of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86854 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Selenoprotein M (E-16) is recommended for detection of Selenoprotein M of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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) or our catalog for detailed protocols and support products.



Try **Selenoprotein M (C-3): sc-514952**, our highly recommended monoclonal alternative to Selenoprotein M (E-16).