

SELB (F-4): sc-365707

BACKGROUND

SELB (selenocysteine-specific elongation factor), also known as EEFSEC (eukaryotic elongation factor, selenocysteine-tRNA-specific) or EFSEC, is a 596 amino acid protein that localizes to both the nucleus and the cytoplasm and belongs to the GTP-binding elongation factor family. Functioning as a translation factor, SELB binds GTP and GDP and is necessary for the incorporation of selenocysteine into target proteins. The gene encoding SELB maps to human chromosome 3, which houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci. Key tumor suppressing genes on chromosome 3 include those that encode the apoptosis mediator RASSF1, the cell migration regulator HYAL1 and the angiogenesis suppressor SEMA3B. Marfan syndrome, porphyria, von Hippel-Lindau syndrome, osteogenesis imperfecta and Charcot-Marie-Tooth disease are a few of the numerous genetic diseases associated with chromosome 3.

REFERENCES

1. Fagegaltier, D., et al. 2000. Characterization of mSelB, a novel mammalian elongation factor for selenoprotein translation. *EMBO J.* 19: 4796-4805.
2. Zavacki, A.M., et al. 2003. Coupled tRNA(Sec)-dependent assembly of the selenocysteine decoding apparatus. *Mol. Cell* 11: 773-781.
3. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607695. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Mehta, A., et al. 2004. Efficiency of mammalian selenocysteine incorporation. *J. Biol. Chem.* 279: 37852-37859.
5. Caban, K. and Copeland, P.R. 2006. Size matters: a view of selenocysteine incorporation from the ribosome. *Cell. Mol. Life Sci.* 63: 73-81.
6. Gupta, M. and Copeland, P.R. 2007. Functional analysis of the interplay between translation termination, selenocysteine codon context, and selenocysteine insertion sequence-binding protein 2. *J. Biol. Chem.* 282: 36797-36807.

CHROMOSOMAL LOCATION

Genetic locus: EEFSEC (human) mapping to 3q21.3; Eefsec (mouse) mapping to 6 D1.

SOURCE

SELB (F-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 527-563 near the C-terminus of SELB of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365707 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

SELB (F-4) is recommended for detection of SELB 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 SELB siRNA (h): sc-76468, SELB siRNA (m): sc-76469, SELB shRNA Plasmid (h): sc-76468-SH, SELB shRNA Plasmid (m): sc-76469-SH, SELB shRNA (h) Lentiviral Particles: sc-76468-V and SELB shRNA (m) Lentiviral Particles: sc-76469-V.

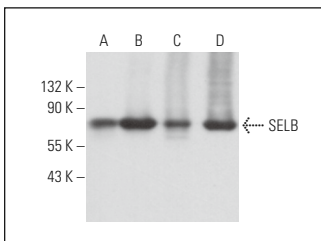
Molecular Weight of SELB: 64 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

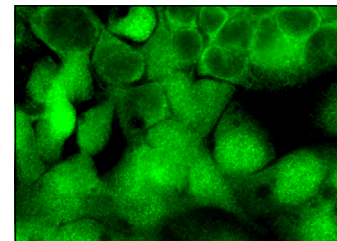
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SELB (F-4): sc-365707. Western blot analysis of SELB expression in Hep G2 (A), HeLa (B), MIA PaCa-2 (C) and Jurkat (D) whole cell lysates.



SELB (F-4): sc-365707. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Li, Z., et al. 2022. Ribosome stalling during selenoprotein translation exposes a ferroptosis vulnerability. *Nat. Chem. Biol.* 18: 751-761.

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.