

SBP-2 (2957C2a): sc-130639

BACKGROUND

Eukaryotes require a selenocysteine (Sec) insertion sequence (SECIS) element in the 3' untranslated region of the mRNA to decode the UGA codon as Sec. SECIS-binding protein 2 (SBP-2) specifically binds selenoprotein mRNAs to form a functional complex and is essential for the insertion of Sec into selenoproteins. Purified SBP-2 interacts specifically with the SECIS element in the phospholipid hydroperoxide glutathione peroxidase mRNA. SBP-2 shows binding activity in the liver and testis as well as hepatoma cells. SBP-2 binds to a conserved RNA binding domain shared with several ribosomal proteins and eukaryotic translation termination release factor 1. A second domain located N-terminal to the RNA binding domain required for Sec insertion allows SBP-2 to stably associate with the ribosomal fraction of cells. SBP-2 preferentially stimulates incorporation directed by the selenoprotein P and phospholipid hydroperoxide glutathione peroxidase SECIS elements. SBP-2 may have a distinct function in selecting the ribosomes for Sec insertion.

REFERENCES

- Berry, M.J., et al. 1991. Recognition of UGA as a selenocysteine codon in type 1 deiodinase requires sequences in the 3' untranslated region. *Nature* 353: 273-276.
- Lesoon, A., et al. 1997. An RNA-binding protein recognizes a mammalian selenocysteine insertion sequence element required for cotranslational incorporation of selenocysteine. *Mol. Cell. Biol.* 17: 1977-1985.
- Copeland P.R. and Driscoll, D.M. 1999. Purification, redox sensitivity, and RNA binding properties of SECIS-binding protein 2, a protein involved in selenoprotein biosynthesis. *J. Biol. Chem.* 274: 25447-25454.
- Copeland, P., et al. 2000. A novel RNA binding protein, SBP-2, is required for the translation of mammalian selenoprotein mRNAs. *EMBO J.* 19: 306-314.
- Low, S.C., et al. 2000. SECIS-SBP-2 interactions dictate selenocysteine incorporation efficiency and selenoprotein hierarchy. *EMBO J.* 19: 6882-6890.

CHROMOSOMAL LOCATION

Genetic locus: SECISBP2 (human) mapping to 9q22.2.

SOURCE

SBP-2 (2957C2a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the N-terminus of SBP-2 of human origin.

PRODUCT

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

STORAGE

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

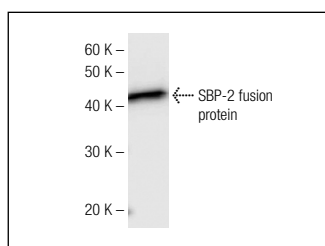
APPLICATIONS

SBP-2 (2957C2a) is recommended for detection of SBP-2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

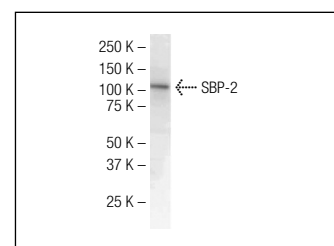
Suitable for use as control antibody for SBP-2 siRNA (h): sc-106885, SBP-2 shRNA Plasmid (h): sc-106885-SH and SBP-2 shRNA (h) Lentiviral Particles: sc-106885-V.

Positive Controls: HEK293 whole cell lysate: sc-45136.

DATA



SBP-2 (2957C2a): sc-130639. Western blot analysis of human recombinant SBP-2 fusion protein.



SBP-2 (2957C2a): sc-130639. Western blot analysis of SBP-2 expression in HEK293 whole cell lysate.

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.