SANTA CRUZ BIOTECHNOLOGY, INC.

IF2 (S-15): sc-107621

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The initiation of protein synthesis in eukaryotic cells is regulated by interactions between protein initiation factors and RNA molecules. IF2, also known as MTIF2 (mitochondrial translational initiation factor 2), is a 727 amino acid protein that localizes to mitochondria and is expressed ubiquitously, with highest expression in skeletal muscle. Functioning as a monomer, IF2 exists as an essential component of protein synthesis, specifically promoting the GTP-dependent binding of initiator tRNA to the ribosome and possibly playing a role in the formation of the 70S ribosomal complex. The gene encoding IF2 maps to human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin icthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

REFERENCES

1. Ma, L. and Spremulli, L.L. 1995. Cloning and sequence analysis of the human mitochondrial translational initiation factor 2 cDNA. J. Biol. Chem. 270: 1859-1865.
2. Bonner, D.S., Wiley, J.E. and Farwell, M.A. 1998. Assignment1 of the mitochondrial translational initiation factor 2 gene (MTIF2) to human chromosome 2 bands p16→p14 by *in situ* hybridization and with somatic cell hybrids. Cytogenet. Cell Genet. 83: 80-81.
3. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 603766. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Gehin, M., et al. 2002. The function of TIF2/GRIP1 in mouse reproduction isdistinct from those of SRC-1 and p/CIP. Mol. Cell. Biol. 22: 5923-5937.
5. Overman, R.G.,et al. 2003. The human mitochondrial translation initiation factor 2 gene (MTIF2): transcriptional analysis and identification of a pseudogene. Biochim. Biophys. Acta 1628: 195-205.
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CHROMOSOMAL LOCATION

Genetic locus: MTIF2 (human) mapping to 2p16.1; Mtif2 (mouse) mapping to 11 A3.3.

SOURCE

IF2 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of IF2 of human origin.

STORAGE

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

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-107621 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IF2 (S-15) is recommended for detection of IF2 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).

IF2 (S-15) is also recommended for detection of IF2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for IF2 siRNA (h): sc-94300, IF2 siRNA (m): sc-146149, IF2 shRNA Plasmid (h): sc-94300-SH, IF2 shRNA Plasmid (m): sc-146149-SH, IF2 shRNA (h) Lentiviral Particles: sc-94300-V and IF2 shRNA (m) Lentiviral Particles: sc-146149-V.

Molecular Weight of IF2: 81 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 or our catalog for detailed protocols and support products.