SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2Bδ (H-4): sc-271795

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. The eukaryotic initiation complex eIF2B exists as a five subunit complex composed of eIF2B α, eIF2B β, eIF2B γ, eIF2B δ and eIF2B ε. The eIF2B complex catalyzes the exchange of GDP for GTP on the eIF2 complex, following the interaction of eIF2/GTP with the 40S ribosomal subunit. Guanine nucleotide exchange factor (GEF) activity is exhibited by the eIF2B ε subunit alone, but is greater in the presence of all five eIF2B subunits. Phosphorylation of eIF2 inhibits GEF activity of eIF2B, an inhibition that requires the eIF2B α subunit.

REFERENCES

1. Henderson, R.A., et al. 1994. The δ subunit of murine guanine nucleotide exchange factor eIF-2B. Characterization of cDNAs predicts isoforms differing at the amino-terminal end. J. Biol. Chem. 269: 30517-30523.
2. Flowers, K.M., et al. 1995. Structure and sequence of the gene encoding the α subunit of rat translation initiation factor-2B. Biochim. Biophys. Acta 1264: 163-167.
3. Price, N.T., et al. 1996. Cloning of cDNA for the γ subunit of mammalian translation initiation factor 2B, the guanine nucleotide-exchange factor for eukaryotic initiation factor 2. Biochem. J. 318: 631-636.
4. Price, N.T., et al. 1996. eIF2B, the guanine nucleotide-exchange factor for eukaryotic initiation factor 2. Sequence conservation between the α, β and δ subunits of eIF2B from mammals and yeast. Biochem. J. 318: 637-643.
5. Asuru, A.I., et al. 1996. Cloning and characterization of cDNAs encoding the ε-subunit of eukaryotic initiation factor-2B from rabbit and human. Biochim. Biophys. Acta 1307: 309-317.
6. Webb, B.L., et al. 1997. Eukaryotic initiation factor 2B (eIF2B). Int. J. Biochem. Cell Biol. 29: 1127-1131.
7. Fabian, J.R., et al. 1997. Subunit assembly and guanine nucleotide exchange activity of eukaryotic initiation factor-2B expressed in Sf9 cells. J. Biol. Chem. 272: 12359-12365.

CHROMOSOMAL LOCATION

Genetic locus: EIF2B4 (human) mapping to 2p23.3; Eif2b4 (mouse) mapping to 5 B1.

SOURCE

eIF2Bδ (H-4) is a mouse monoclonal antibody raised against amino acids 224-503 mapping near the C-terminus of eIF2Bδ of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

eIF2Bδ (H-4) is recommended for detection of eIF2Bδ 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 eIF2Bδ siRNA (h): sc-35276, eIF2Bδ siRNA (m): sc-35277, eIF2Bδ shRNA Plasmid (h): sc-35276-SH, eIF2Bδ shRNA Plasmid (m): sc-35277-SH, eIF2Bδ shRNA (h) Lentiviral Particles: sc-35276-V and eIF2Bδ shRNA (m) Lentiviral Particles: sc-35277-V.

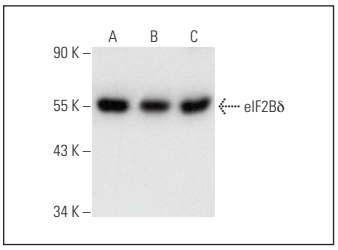
Molecular Weight of eIF2Bδ: 60 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, K-562 whole cell lysate: sc-2203 or ES-2 cell lysate: sc-24674.

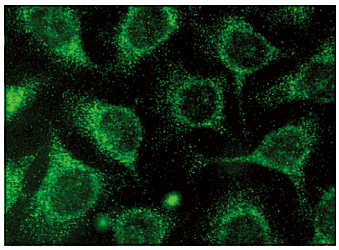
RECOMMENDED SUPPORT REAGENTS

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



eIF2Bδ (H-4): sc-271795. Western blot analysis of eIF2Bδ expression in K-562 (**A**), KNRK (**B**) and ES-2 (**C**) whole cell lysates.



eIF2Bδ (H-4): sc-271795. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Guan, B.J., et al. 2017. A unique ISR program determines cellular responses to chronic stress. Mol. Cell 68: 885-900.e6.
2. Wuerth, J.D., et al. 2020. eIF2B as a target for viral evasion of PKR-mediated translation inhibition. mBio 11: e00976-20.

RESEARCH USE

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