

eIF2B δ (D-1): sc-271332

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

- Henderson, R.A., et al. 1994. The δ -subunit of murine guanine nucleotide exchange factor eIF2B. Characterization of cDNAs predicts isoforms differing at the amino-terminal end. *J. Biol. Chem.* 269: 30517-30523.
- 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.
- 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.
- 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.
- 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.
- Webb, B.L. and Proud, C.G. 1997. Eukaryotic initiation factor 2B (eIF2B). *Int. J. Biochem. Cell Biol.* 29: 1127-1131.
- 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.

SOURCE

eIF2B δ (D-1) is a mouse monoclonal antibody raised against amino acids 224-503 mapping near the C-terminus of eIF2B δ of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} 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

eIF2B δ (D-1) is recommended for detection of eIF2B δ of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 eIF2B δ siRNA (h): sc-35276, eIF2B δ shRNA Plasmid (h): sc-35276-SH and eIF2B δ shRNA (h) Lentiviral Particles: sc-35276-V.

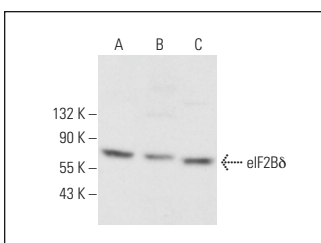
Molecular Weight of eIF2B δ : 60 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226, PC-3 cell lysate: sc-2220 or K-562 whole cell lysate: sc-2203.

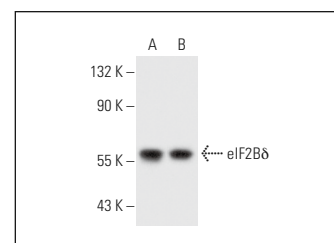
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



eIF2B δ (D-1): sc-271332. Western blot analysis of eIF2B δ expression in K-562 (A), PC-3 (B) and HEL 92.1.7 (C) whole cell lysates.



eIF2B δ (D-1): sc-271332. Western blot analysis of eIF2B δ expression in K-562 (A) and COLO 320DM (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Hodgson, R.E., et al. 2019. Cellular eIF2B subunit localisation: implications for the integrated stress response and its control by small molecule drugs. *Mol. Biol. Cell* 30: 942-958.
- Hanson, F.M., et al. 2024. eIF2B localization and its regulation during the integrated stress response is cell-type specific. *iScience* 27: 110851.

RESEARCH USE

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