SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2Bε (P-7): sc-9982

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 eIF2Bα, eIF2Bβ, eIF2Bγ, eIF2Bδ, and eIF2Bε. 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 was exhibited by the eIF2Bε subunit alone, but it was greater in the presence of all five eIF2B subunits. Phosphorylation of eIF2 inhibits GEF activity of eIF2B, an inhibition that requires the eIF2Bα 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 alpha-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. and Proud, C.G. 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: Eif2b5 (mouse) mapping to 16 A3.

SOURCE

eIF2Bε (P-7) is a mouse monoclonal antibody raised against full length eIF2Bε of rat 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

eIF2Bε (P-7) is recommended for detection of eIF2Bε of mouse and rat 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 eIF2Bε siRNA (m): sc-35279, eIF2Bε shRNA Plasmid (m): sc-35279-SH and eIF2Bε shRNA (m) Lentiviral Particles: sc-35279-V.

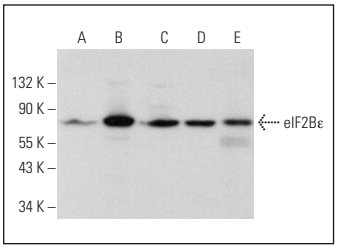
Molecular Weight of eIF2Bε: 90 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, KNRK whole cell lysate: sc-2214 or NIH/3T3 whole cell lysate: sc-2210.

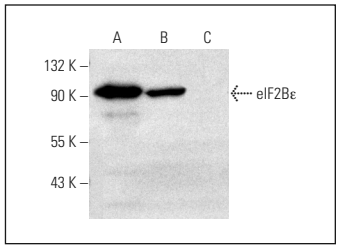
RECOMMENDED SUPPORT REAGENTS

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).

DATA



eIF2Bε (P-7): sc-9982. Western blot analysis of eIF2Bε expression in c4 (**A**), PC-12 (**B**), F9 (**C**) and RAW 264.7 (**D**) whole cell lysates and mouse brain tissue extract (**E**).



eIF2Bε (P-7): sc-9982. Western blot analysis of eIF2Bε expression in KNRK (**A**), NIH/3T3 (**B**) and K-562 (**C**) whole cell lysates. Note lack of reactivity with human eIF2Bε in Lane **C**.

SELECT PRODUCT CITATIONS

1. Balachandran, S. and Barber, G.N. 2004. Defective translational control facilitates vesicular stomatitis virus oncolysis. Cancer Cell 5: 51-65.

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.