SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2β (D-3): sc-133209

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 is exhibited by the eIF2Bε 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 eIF2Bα subunit.

REFERENCES

1. Trachsel, H. and Staehelin, T. 1978. Binding and release of eukaryotic initiation factor eIF2 and GTP during protein synthesis initiation. Proc. Natl. Acad. Sci. USA 75: 204-208.
2. Benne, R., et al. 1979. The activity of eukaryotic initiation factor eIF2 in ternary complex formation with GTP and Met-tRNA. J. Biol. Chem. 254: 3201-3205.
3. Ernst, H., et al. 1987. Cloning and sequencing of complementary DNAs encoding the α subunit of translational initiation factor eIF2. Characterization of the protein and its messenger RNA. J. Biol. Chem. 262: 1206-1212.
4. Pathak, V.K., et al. 1988. Structure of the β subunit of translational initiation factor eIF2. Cell 54: 633-639.
5. Kaufman, R.J., et al. 1989. The phosphorylation state of eucaryotic initiation factor 2 alters translational efficiency of specific mRNAs. Mol. Cell. Biol. 9: 946-958.
6. Gaspar, N.J., et al. 1994. Translation initiation factor eIF-2. Cloning and expression of the human cDNA encoding the γ subunit. J. Biol. Chem. 269: 3415-3422.

CHROMOSOMAL LOCATION

Genetic locus: EIF2S2 (human) mapping to 20q11.22; Eif2s2 (mouse) mapping to 2 H1.

SOURCE

eIF2β (D-3) is a mouse monoclonal antibody raised against amino acids 131-333 mapping at the C-terminus of eIF2β 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.

RESEARCH USE

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

APPLICATIONS

eIF2β (D-3) is recommended for detection of eIF2β 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 eIF2β siRNA (h): sc-35270, eIF2β siRNA (m): sc-35271, eIF2β shRNA Plasmid (h): sc-35270-SH, eIF2β shRNA Plasmid (m): sc-35271-SH, eIF2β shRNA (h) Lentiviral Particles: sc-35270-V and eIF2β shRNA (m) Lentiviral Particles: sc-35271-V.

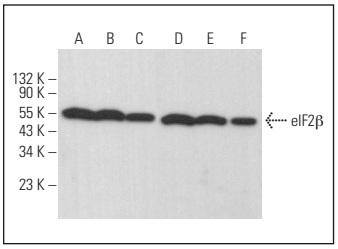
Molecular Weight of eIF2β: 45 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, KNRK whole cell lysate: sc-2214 or NIH/3T3 whole cell lysate: sc-2210.

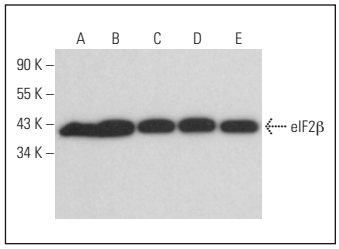
RECOMMENDED SUPPORT REAGENTS

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). 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



eIF2β (D-3): sc-133209. Western blot analysis of eIF2β expression in NIH/3T3 (**A**), 3T3-L1 (**B**), BYDP (**C**), c4 (**D**), A549 (**E**) and MOLT-4 (**F**) whole cell lysates.



eIF2β (D-3): sc-133209. Western blot analysis of eIF2β expression in KNRK (**A**), NIH/3T3 (**B**), Jurkat (**C**), HeLa (**D**) and PC-12 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Salton, G.D., et al. 2017. Deletion of eIF2β lysine stretches creates a dominant negative that affects the translation and proliferation in human cell line: A tool for arresting the cell growth. Cancer Biol. Ther. 18: 560-570.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.