SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2Bγ (C-11): sc-137248

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. 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.
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: EIF2B3 (human) mapping to 1p34.1; Eif2b3 (mouse) mapping to 4 D1.

SOURCE

eIF2Bγ (C-11) is a mouse monoclonal antibody raised against amino acids 153-452 mapping at the C-terminus of eIF2Bγ 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

eIF2Bγ (C-11) is recommended for detection of eIF2Bγ 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 eIF2Bγ siRNA (h): sc-35274, eIF2Bγ siRNA (m): sc-35275, eIF2Bγ shRNA Plasmid (h): sc-35274-SH, eIF2Bγ shRNA Plasmid (m): sc-35275-SH, eIF2Bγ shRNA (h) Lentiviral Particles: sc-35274-V and eIF2Bγ shRNA (m) Lentiviral Particles: sc-35275-V.

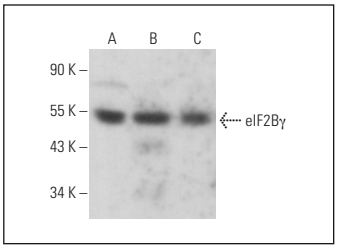
Molecular Weight of eIF2Bγ: 50 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, MCF7 whole cell lysate: sc-2206 or HeLa nuclear extract: sc-2120.

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



eIF2Bγ (C-11): sc-137248. Western blot analysis of eIF2Bγ expression in HeLa nuclear extract (**A**) and HL-60 (**B**) and MCF7 (**C**) whole cell lysates.

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. 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.
3. 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.