SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2Bγ (P-5): sc-9980

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 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. 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.

CHROMOSOMAL LOCATION

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

SOURCE

eIF2Bγ (P-5) is a mouse monoclonal antibody raised against full length eIF2Bγ 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.

APPLICATIONS

eIF2Bγ (P-5) is recommended for detection of eIF2Bγ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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.

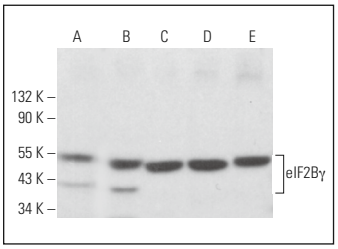
Molecular Weight of eIF2Bγ: 50 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, RAW 264.7 whole cell lysate: sc-2211 or HeLa nuclear extract: sc-2120.

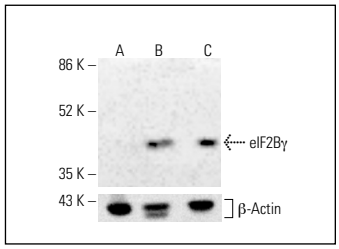
RECOMMENDED SUPPORT REAGENTS

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 (P-5): sc-9980. Western blot analysis of eIF2Bγ expression in HeLa nuclear extract (**A**) and MCF7 (**B**), RAW 264.7 (**C**), P19 (**D**) and A-10 (**E**) whole cell lysates.



eIF2Bγ (P-5): sc-9980. Western blot analysis of eIF2Bγ expression in untreated (**A**) and chemically-treated (**B**, **C**) HCT-116 whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Balachandran, S., et al. 2004. Defective translational control facilitates vesicular stomatitis virus oncolysis. Cancer Cell 5: 51-65.
2. Zhang, J., et al. 2004. Down-regulation of viral replication by adenoviral-mediated expression of siRNA against cellular cofactors for hepatitis C virus. Virology 320: 135-143.
3. Wortham, N.C., et al. 2014. Analysis of the subunit organization of the eIF2B complex reveals new insights into its structure and regulation. FASEB J. 28: 2225-2237.
4. Wortham, N., et al. 2016. Stoichiometry of the eIF2B complex is maintained by mutual stabilisation of subunits. Biochem. J. 473: 571-580.

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.

PROTOCOLS

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