SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2Bε (B-7): sc-55558

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 has been exhibited by the eIF2Bε subunit alone, but 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.

CHROMOSOMAL LOCATION

Genetic locus: EIF2B5 (human) mapping to 3q27.1; Eif2b5 (mouse) mapping to 16 A3.

SOURCE

eIF2Bε (B-7) is a mouse monoclonal antibody raised against amino acids 422-711 mapping near the C-terminus of eIF2Bε 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.

eIF2Bε (B-7) is available conjugated to agarose (sc-55558 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55558 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55558 PE), fluorescein (sc-55558 FITC), Alexa Fluor® 488 (sc-55558 AF488), Alexa Fluor® 546 (sc-55558 AF546), Alexa Fluor® 594 (sc-55558 AF594) or Alexa Fluor® 647 (sc-55558 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55558 AF680) or Alexa Fluor® 790 (sc-55558 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

eIF2Bε (B-7) is recommended for detection of eIF2Bε 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), immunohistochemistry (including paraffin-embedded sections) (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 eIF2Bε siRNA (h): sc-35278, eIF2Bε siRNA (m): sc-35279, eIF2Bε shRNA Plasmid (h): sc-35278-SH, eIF2Bε shRNA Plasmid (m): sc-35279-SH, eIF2Bε shRNA (h) Lentiviral Particles: sc-35278-V and eIF2Bε shRNA (m) Lentiviral Particles: sc-35279-V.

Molecular Weight of eIF2Bε: 90 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, NIH/3T3 whole cell lysate: sc-2210 or K-562 whole cell lysate: sc-2203.

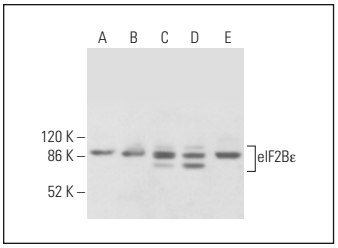
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

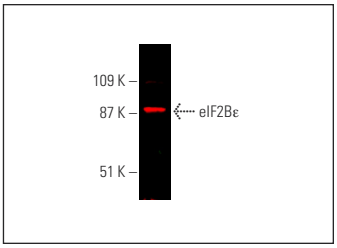
RESEARCH USE

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

DATA



eIF2Bε (B-7): sc-55558. Western blot analysis of eIF2Bε expression in NIH/3T3 (**A**), HeLa (**B**), K-562 (**C**), Jurkat (**D**) and HT-29 (**E**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



eIF2Bε (B-7): sc-55558. Near-infrared western blot analysis of eIF2Bε expression in HT-29 whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.

SELECT PRODUCT CITATIONS

1. Rojas, M., et al. 2010. Protein kinase R is responsible for the phosphorylation of eIF2α in rotavirus infection. J. Virol. 84: 10457-10466.
2. Woo, C.W., et al. 2012. Toll-like receptor activation suppresses ER stress factor CHOP and translation inhibition through activation of eIF2B. Nat. Cell Biol. 14: 192-200.
3. Sidrauski, C., et al. 2013. Pharmacological brake-release of mRNA translation enhances cognitive memory. Elife 2: e00498.
4. Palmesino, E., et al. 2016. Association of eukaryotic translation initiation factor eIF2B with fully solubilized CXCR4. J. Leukoc. Biol. 99: 971-978.
5. Cai, E.Y., et al. 2020. Selective translation of cell fate regulators mediates tolerance to broad oncogenic stress. Cell Stem Cell 27: 270-283.
6. Wuerth, J.D., et al. 2020. eIF2B as a target for viral evasion of PKR-mediated translation inhibition. mBio 11: e00976-20.
7. Boone, M., et al. 2022. A point mutation in the nucleotide exchange factor eIF2B constitutively activates the integrated stress response by allosteric modulation. Elife 11: e76171.

PROTOCOLS

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