SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2β (P-3): sc-9978

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.

CHROMOSOMAL LOCATION

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

SOURCE

eIF2β (P-3) is a mouse monoclonal antibody raised against full length eIF2β.

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.

eIF2β (P-3) is available conjugated to agarose (sc-9978 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-9978 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-9978 PE), fluorescein (sc-9978 FITC), Alexa Fluor® 488 (sc-9978 AF488), Alexa Fluor® 546 (sc-9978 AF546), Alexa Fluor® 594 (sc-9978 AF594) or Alexa Fluor® 647 (sc-9978 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-9978 AF680) or Alexa Fluor® 790 (sc-9978 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

eIF2β (P-3) is recommended for detection of eIF2β 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), 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 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.

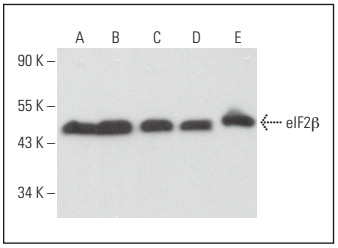
Molecular Weight of eIF2β: 45 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, NIH/3T3 whole cell lysate: sc-2210 or HEK293 whole cell lysate: sc-45136.

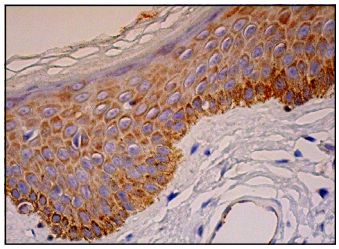
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



eIF2β (P-3): sc-9978. Western blot analysis of eIF2β expression in KNRK (**A**), NIH/3T3 (**B**), HEK293 (**C**), PC-12 (**D**) and PC-3 (**E**) whole cell lysates.



eIF2β (P-3): sc-9978. Immunoperoxidase staining of formalin fixed, paraffin-embedded human vulva/anal skin tissue showing cytoplasmic staining of epidermal cells.

SELECT PRODUCT CITATIONS

1. Kubica, N., et al. 2005. Resistance exercise increases muscle protein synthesis and translation of eukaryotic initiation factor 2Bε mRNA in a mammalian target of rapamycin-dependent manner. J. Biol. Chem. 280: 7570-7580.
2. Latreille, M., et al. 2006. Nck in a complex containing the catalytic subunit of protein phosphatase 1 regulates eukaryotic initiation factor 2α signaling and cell survival to endoplasmic reticulum stress. J. Biol. Chem. 281: 26633-26644.
3. Lee, S.H., et al. 2006. p97/DAP5 is a ribosome-associated factor that facilitates protein synthesis and cell proliferation by modulating the synthesis of cell cycle proteins. EMBO J. 25: 4008-4019.
4. Gandin, V., et al. 2016. mTORC1 and CK2 coordinate ternary and eIF4F complex assembly. Nat. Commun. 7: 11127.
5. Haizel, S.A., et al. 2020. 5'-UTR recruitment of the translation initiation factors eIF4GI or DAP5 drives cap-independent translation of a subset of human mRNAs. J. Biol. Chem. 295: 11693-11706.
6. Mendes, A., et al. 2021. Proteostasis in dendritic cells is controlled by the PERK signaling axis independently of ATF4. Life Sci. Alliance 4: e202000865.

STORAGE

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