

eIF2B α (C-11): sc-376846

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 eIF2B α , eIF2B β , eIF2B γ , eIF2B δ and eIF2B ϵ . 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 eIF2B ϵ 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 eIF2B α subunit. Defects in the gene encoding eIF2B α are a cause of leukoencephalopathy with vanishing white matter (VWM), a brain disease that is characterized by head trauma and motor deterioration.

REFERENCES

1. van der Knaap, M.S., et al. 2002. Mutations in each of the five subunits of translation initiation factor eIF2B can cause leukoencephalopathy with vanishing white matter. *Ann. Neurol.* 51: 264-270.
2. van der Knaap, M.S., et al. 2003. eIF2B-related disorders: antenatal onset and involvement of multiple organs. *Am. J. Hum. Genet.* 73: 1199-1207.
3. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 606686. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Ohlenbusch, A., et al. 2005. Identification of ten novel mutations in patients with eIF2B-related disorders. *Hum. Mutat.* 25: 411.
5. Singh, C.R., et al. 2006. An eIF5/eIF2 complex antagonizes guanine nucleotide exchange by eIF2B during translation initiation. *EMBO J.* 25: 4537-4546.

CHROMOSOMAL LOCATION

Genetic locus: EIF2B1 (human) mapping to 12q24.31.

SOURCE

eIF2B α (C-11) is a mouse monoclonal antibody raised against amino acids 1-305 representing full length eIF2B α of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

eIF2B α (C-11) is available conjugated to agarose (sc-376846 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376846 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376846 PE), fluorescein (sc-376846 FITC), Alexa Fluor® 488 (sc-376846 AF488), Alexa Fluor® 546 (sc-376846 AF546), Alexa Fluor® 594 (sc-376846 AF594) or Alexa Fluor® 647 (sc-376846 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376846 AF680) or Alexa Fluor® 790 (sc-376846 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

eIF2B α (C-11) is recommended for detection of eIF2B α of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 eIF2B α siRNA (h): sc-77248, eIF2B α shRNA Plasmid (h): sc-77248-SH and eIF2B α shRNA (h) Lentiviral Particles: sc-77248-V.

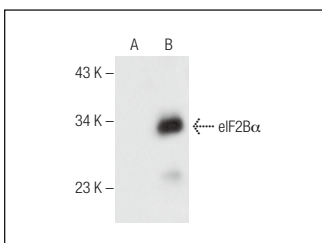
Molecular Weight of eIF2B α : 34 kDa.

Positive Controls: eIF2B α (h): 293T Lysate: sc-111722 or K-562 whole cell lysate: sc-2203.

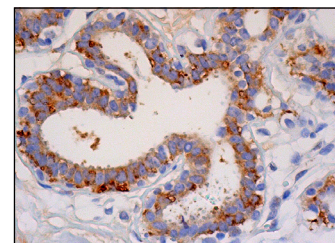
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



eIF2B α (C-11): sc-376846. Western blot analysis of eIF2B α expression in non-transfected: sc-117752 (A) and human eIF2B α transfected: sc-111722 (B) 293T whole cell lysates.



eIF2B α (C-11): sc-376846. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic staining of glandular cells.

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.