SANTA CRUZ BIOTECHNOLOGY, INC.

eIF2Bα (FL-305): sc-98323

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. Defects in the gene encoding eIF2Bα 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.
6. Tirosh, S., et al. 2007. A role for eukaryotic translation initiation factor 2B (eIF2B) in taste memory consolidation and in thermal control establishment during the critical period for sensory development. Dev. Neurobiol. 67: 728-739.
7. Mohammad-Qureshi, S.S., et al. 2007. Critical contacts between the eukaryotic initiation factor 2B (eIF2B) catalytic domain and both eIF2β and -2γ mediate guanine nucleotide exchange. Mol. Cell. Biol. 27: 5225-5234.
8. Maletkovic, J., et al. 2008. Genetic and clinical heterogeneity in eIF2B-related disorder. J. Child Neurol. 23: 205-215.

CHROMOSOMAL LOCATION

Genetic locus: EIF2B1 (human) mapping to 12q24.31; Eif2b1 (mouse) mapping to 5 F.

SOURCE

eIF2Bα (FL-305) is a rabbit polyclonal antibody raised against amino acids 1-305 representing full length eIF2Bα of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

eIF2Bα (FL-305) is recommended for detection of eIF2Bα 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).

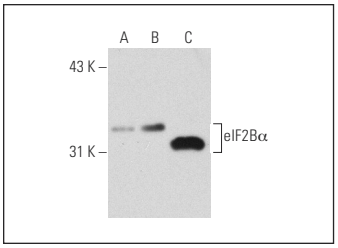
eIF2Bα (FL-305) is also recommended for detection of eIF2Bα in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for eIF2Bα siRNA (h): sc-77248, eIF2Bα siRNA (m): sc-77249, eIF2Bα shRNA Plasmid (h): sc-77248-SH, eIF2Bα shRNA Plasmid (m): sc-77249-SH, eIF2Bα shRNA (h) Lentiviral Particles: sc-77248-V and eIF2Bα shRNA (m) Lentiviral Particles: sc-77249-V.

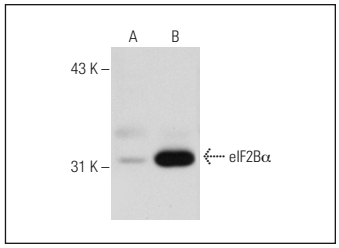
Molecular Weight of eIF2Bα: 34 kDa.

Positive Controls: eIF2Bα (h): 293T Lysate: sc-111722, eIF2Bα (m): 293T Lysate: sc-119972 or K-562 whole cell lysate: sc-2203.

DATA



eIF2Bα (FL-305): sc-98323. Western blot analysis of eIF2Bα expression in non-transfected 293T: sc-117752 (**A**), mouse eIF2Bα transfected 293T: sc-119972 (**B**) and K-562 (**C**) whole cell lysates.



eIF2Bα (FL-305): sc-98323. Western blot analysis of eIF2Bα expression in non-transfected: sc-117752 (**A**) and human eIF2Bα transfected: sc-111722 (**B**) 293T whole cell lysates.

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 or our catalog for detailed protocols and support products.

MONOS Satisfaction Guaranteed

Try **eIF2Bα (C-11): sc-376846**, our highly recommended monoclonal alternative to eIF2Bα (FL-305).