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Product Information

Anti-eIF2Bε
produced in rabbit, IgG fraction of antiserum

Catalog Number: **E6407**

Product Description

Anti-eIF2Bε is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 50-65 of human eIF2ε (GeneID: 8893) conjugated to KLH. The corresponding sequence is identical in rat and mouse**.** Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-eIF2Bε specifically recognizes human, rat, and mouse eIF2Bε. The antibody may be used in several immunochemical techniques including immunoblotting (~80 kDa) and immunofluorescence. Staining of the eIF2Bε band in immunoblotting is specifically inhibited with the immunizing peptide.

Eukaryotic initiation factor eIF2B mediates the recycling of the eIF2 protein, which binds the initiator Met-tRNA (Met-tRNA$_i$) to the 40S ribosomal subunit and is required for every initiation event. eIF2B converts its substrate, eIF2, from an inactive eIF2·GDP complex to eIF2·GTP. The rate at which GDP is released from eIF2 is very slow and eIF2B is required to accelerate the regeneration of active eIF2▪GTP. This exchange process is a key regulatory step for the control of translation initiation in eukaryotic organisms.
eIF2B is composed of five subunits termed α–ε in order of increasing size.[1] The eIF2Bα, -β, and -δ subunits form the "regulatory" sub-complex that down-regulates eIF2B activity in response to the phosphorylation of eIF2 on Ser^{51}.[2] The eIF2Bγ and eIF2Bε (also known as EIF2BE and EIF2B5) subunits form the "catalytic" sub-complex that is required for accelerating the rate of guanine nucleotide exchange. Multiple phosphorylation sites in the largest catalytic subunit (ε) of mammalian eIF2B, have so far been identified in mammals.[3] They are required for binding to eIF2 and for full activity of eIF2Bε. The exact role of each of the other four subunits is less defined. Studies have linked inherited mutations in any of the five eIF2B subunits to a fatal human disorder known as childhood ataxia with central nervous system hypomyelination (CACH) or vanishing white matter (VWN) disease. [4]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody dilution of 1:500-1:1000 is recommended using Rat1 or HEK-293T cell lysates.

Immunofluorescence: a working antibody dilution of 1:500-1:1000 is recommended using paraformaldehyde-fixed NIH-3T3 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. Pain, V.M., *J. Biochem.,* **236**, 747-771 (1996).
2. Pavitt, G.D., et al., *Biochem. Soc. Trans.,* **33,**1487-1492 (2005).
3. Wang, X., et al., *EMBO J*., **20,** 4349-4359 (2001).
4. Leegwater, P.A., et al., *Nature Genet*., **29,** 383-388 (2001).

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