

eIF1/1B (D-15): sc-49187

BACKGROUND

In mammalian cells, translation is controlled at the level of polypeptide chain initiation by initiation factors. Eukaryotic translation initiation factor 1 (eIF1) is crucial for the scanning process *in vitro*, acting as a component of a complex involved in recognition of the initiator codon. Translation is also initiated by the role of eIF1 in regulating the activity of ribosomal subunits 43S, 48S and 40S. eIF1 enables 43S ribosomal complexes to discern between cognate and near-cognate initiation codons, sensing the nucleotide content of initiation codons. It is also a promotor, along with eukaryotic translation initiation factor 1A (eIF1A), for assembly of 48S ribosomal complexes at the initiation codon of a conventional capped mRNA. In addition, eIF1 and eIF1A, together with eukaryotic translation initiation factor 5 (eIF5), function in the formation of stable 40S ribosomal preinitiation complexes. Eukaryotic translation initiation factor 1B (eIF1B) is highly homologous to eIF1, sharing 92% identity at the amino acid level. The function of eIF1B has not been widely studied.

REFERENCES

- Asano, K., et al. 2000. A multifactor complex of eukaryotic initiation factors, eIF1, eIF2, eIF3, eIF5 and initiator tRNA(Met) is an important translation initiation intermediate *in vivo*. *Genes Dev.* 14: 2534-2546.
- Pestova, T.V. and Kolupaeva, V.G. 2002. The roles of individual eukaryotic translation initiation factors in ribosomal scanning and initiation codon selection. *Genes Dev.* 16: 2906-2922.
- Majumdar, R., et al. 2003. Mammalian translation initiation factor eIF1 functions with eIF1A and eIF3 in the formation of a stable 40S preinitiation complex. *J. Biol. Chem.* 278: 6580-6587.
- Maag, D. and Lorsch, J.R. 2003. Communication between eukaryotic translation initiation factors 1 and 1A on the yeast small ribosomal subunit. *J. Mol. Biol.* 330: 917-924.
- Valásek, L., et al. 2004. Interactions of eukaryotic translation initiation factor 3 (eIF3) subunit NIP1/c with eIF1 and eIF5 promote preinitiation complex assembly and regulate start codon selection. *Mol. Cell. Biol.* 24: 9437-9455.
- Hinnebusch, A.G., et al. 2004. Study of translational control of eukaryotic gene expression using yeast. *Ann. N.Y. Acad. Sci.* 1038: 60-74.

CHROMOSOMAL LOCATION

Genetic locus: EIF1 (human) mapping to 17q21.2, EIF1B (human) mapping to 3p22.1; Eif1 (mouse) mapping to 11 D, Eif1b (mouse) mapping to 9 F4.

SOURCE

eIF1/1B (D-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of eIF1 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.

Blocking peptide available for competition studies, sc-49187 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

eIF1/1B (D-15) is recommended for detection of eIF1 and eIF1B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

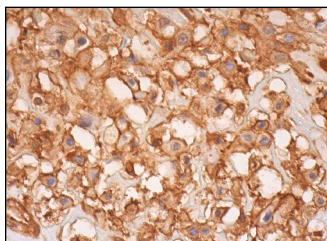
eIF1/1B (D-15) is also recommended for detection of eIF1 and eIF1B in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of eIF1/1B: 12 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



eIF1/1B (D-15): sc-49187. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane staining of decidual 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.



Try **eIF1/1B (B-2): sc-390122**, our highly recommended monoclonal alternative to eIF1/1B (D-15).