

# eIF3 $\beta$ (B-6): sc-271539



The Power to Question

## BACKGROUND

The initiation of protein synthesis in eukaryotic cells is regulated by interactions between protein initiation factors and RNA molecules. Eukaryotic initiation factors (eIFs) are utilized in a sequence of reactions that lead to 80S ribosomal assembly and, ultimately, translation. The eukaryotic initiation factor-3 (eIF3) scaffolding structure is the largest of the eIF complexes and includes eIF3 $\alpha$ , eIF3 $\beta$ , eIF3 $\gamma$ , eIF3 $\delta$ , eIF3 $\epsilon$ , eIF3 $\zeta$ , eIF3 $\eta$  and eIF3 $\theta$ , all of which function to control the assembly of the 40S ribosomal subunit. Association of eIF3 proteins with the 40S ribosomal subunit stabilizes eIF2-GTP-Met-tRNA<sup>iMet</sup> complex association and mRNA binding, and promotes dissociation of 80S ribosomes into 40S and 60S subunits, thereby promoting the assembly of the pre-initiation complex. Overexpression of eIF3 proteins is common in several cancers, suggesting a role for eIF3 proteins in tumorigenesis.

## CHROMOSOMAL LOCATION

Genetic locus: EIF3I (human) mapping to 1p35.1; Eif3i (mouse) mapping to 4 D2.2.

## SOURCE

eIF3 $\beta$  (B-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 215-242 near the C-terminus of eIF3 $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\kappa$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271539 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

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

## APPLICATIONS

eIF3 $\beta$  (B-6) is recommended for detection of eIF3 $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

eIF3 $\beta$  (B-6) is also recommended for detection of eIF3 $\beta$  in additional species, including canine, bovine and avian.

Suitable for use as control antibody for eIF3 $\beta$  siRNA (h): sc-60080, eIF3 $\beta$  siRNA (m): sc-60081, eIF3 $\beta$  shRNA Plasmid (h): sc-60080-SH, eIF3 $\beta$  shRNA Plasmid (m): sc-60081-SH, eIF3 $\beta$  shRNA (h) Lentiviral Particles: sc-60080-V and eIF3 $\beta$  shRNA (m) Lentiviral Particles: sc-60081-V.

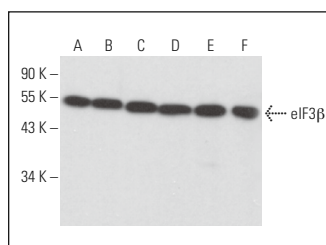
Molecular Weight of eIF3 $\beta$ : 36 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or A-431 whole cell lysate: sc-2201.

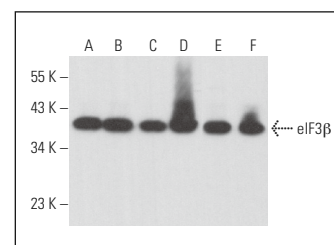
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



eIF3 $\beta$  (B-6): sc-271539. Western blot analysis of eIF3 $\beta$  expression in HeLa (A), Ca Ski (B), MCF7 (C), SH-SY5Y (D), Jurkat (E) and A-431 (F) whole cell lysates.



eIF3 $\beta$  (B-6): sc-271539. Western blot analysis of eIF3 $\beta$  expression in HeLa (A), Jurkat (B), Hep G2 (C), NIH/3T3 (D), AMJ2-C8 (E) and Neuro-2A (F) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Ramachandran, A., et al. 2012. Localization of transforming growth factor  $\beta$  receptor II interacting protein-1 in bone and teeth: implications in matrix mineralization. *J. Histochem. Cytochem.* 60: 323-337.
- Jones, B.L., et al. 2013. Stress granules form in *Brachionus manjavacas* (*Rotifera*) in response to a variety of stressors. *Comp. Biochem. Physiol. A Mol. Integr. Physiol.* 166: 375-384.
- Zeng, L., et al. 2013. The  $\mu$  subunit of murine translation initiation factor eIF3 maintains the integrity of the eIF3 complex and is required for embryonic development, homeostasis, and organ size control. *J. Biol. Chem.* 288: 30087-30093.
- Brugnoli, F., et al. 2013. In triple negative breast tumor cells, PLC- $\beta$ 2 promotes the conversion of CD133<sup>high</sup> to CD133<sup>low</sup> phenotype and reduces the CD133-related invasiveness. *Mol. Cancer* 12: 165.
- Zang, Y., et al. 2017. Eukaryotic translation initiation factor 3b is both a promising prognostic biomarker and a potential therapeutic target for patients with clear cell renal cell carcinoma. *J. Cancer* 8: 3049-3061.
- Bianchi, N., et al. 2021. The motility and mesenchymal features of breast cancer cells correlate with the levels and intracellular localization of transglutaminase type 2. *Cells* 10: 3059.

## RESEARCH USE

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