SANTA CRUZ BIOTECHNOLOGY, INC.

eIF4GII (H-80): sc-292412

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The Power to Question

BACKGROUND

Translation initiation in eukaryotes necessitates the assembly of an 80S ribosomal complex. Eukaryotic initiation factors (eIFs) are utilized in a sequence of reactions that leads to 80S ribosomal assembly and initiation of translation. Mammalian eukaryotic translation initiation factor 4F (eIF4F) is a protein complex that contains eIF4A, eIF4E and eIF4G, binds mRNA at a 5'-cap motif and recruits the 43S ribosomal preinitiation complex to the transcript. Along with eIF4B, the eIF4F complex mediates the unwinding of mRNA secondary structure to facilitate ribosome association. eIF4E specifically interacts with the 5' cap, eIF4A is a bidirectional RNA helicase, and eIF4GI and eIF4GII are scaffolding proteins which coordinate eIF4E, eIF4A, eIF3 and the 40S ribosome. eIF4GII (also known as eIF4G3 and eIF4-g3) is a 1,585 amino acid protein that is 46% homologous and functionally similar to eIF4GI.

REFERENCES

1. Rozen, F., et al. 1990. Bidirectional RNA helicase activity of eucaryotic translation initiation factors 4A and 4F. Mol. Cell Biol. 10: 1134-1144.
2. Pain, V.M. 1996. Initiation of protein synthesis in eukaryotic cells. Eur. J. Biochem. 236: 747-751.
3. Gradi, A., et al.1998. A novel functional human eukaryotic translation initiation factor 4G. Mol. Cell Biol. 18: 334-342.
4. Imataka, H., et al.1998. A newly identified N-terminal amino acid sequence of human eIF4G binds poly(A)-binding protein and functions in poly(A)-dependent translation. EMBO J. 17: 7480-7489.
5. Gingras, A.C., et al. 1999. eIF4 initiation factors: effectors of mRNA recruitment to ribosomes and regulators of translation. Annu. Rev. Biochem. 68: 913-963.
6. 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.
7. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 603929. World Wide Web URL: http://www.ncbi. nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: EIF4G3 (human) mapping to 1p36.12; Eif4g3 (mouse) mapping to 4 D3.

SOURCE

eIF4GII (H-80) is a rabbit polyclonal antibody raised against amino acids 1-80 mapping at the N-terminus of eIF4GII 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.

STORAGE

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

APPLICATIONS

eIF4GII (H-80) is recommended for detection of eIF4GII 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).

eIF4GII (H-80) is also recommended for detection of eIF4GII in additional species, including equine, canine, bovine and porcine.

Molecular Weight of eIF4GII pre-protein: 220 kDa.

Molecular Weight of eIF4GII cleavage products: 200/165/145/137 kDa.

Molecular Weight of eIF4GII isoform 2: 55 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.