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eIF3J (D21G7) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

Entrez-Gene ID #8669
UniProt ID #O75822

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IF-IC	H, M, R, Mk	35 kDa	Rabbit IgG**
Endogenous			

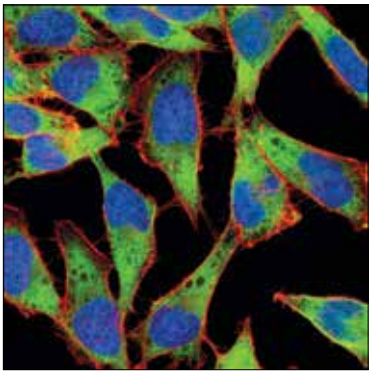
Background: Translation initiation requires a set of factors to facilitate the association of the 40S ribosomal subunit with mRNA. The eIF4F complex, consisting of eIF4E, eIF4A, and eIF4G, binds to the 5' cap structure of mRNA. eIF4F and eIF4B unwind the secondary structure of mRNA at its 5' untranslated region. The 40S ribosomal subunit, along with some initiation factors including eIF3, then binds to the 5' mRNA cap and searches along the mRNA for the initiation codon. eIF3 is a large translation initiation complex with 10 to 13 different subunits. eIF3A, eIF3B, eIF3C, eIF3E, eIF3F, and eIF3H are the core subunits critical for the function of this complex. eIF3 physically interacts with eIF4G, which may be responsible for the association of the 40S ribosomal subunit with mRNA (1). eIF3 also stabilizes the binding of Met-tRNAf.eIF2.GTP to the 40S ribosomal subunit and helps keep the integrity of the resulting complex upon addition of the 60S ribosomal subunit (2). Studies have shown that mTOR interacts with eIF3 directly (3,4). When cells are stimulated by hormones or mitogenic signals, mTOR binds to the eIF3 complex and phosphorylates S6K1 (3). This process results in the dissociation of S6K1 from eIF3 and S6K1 activation. The activated S6K1 then phosphorylates its downstream targets including ribosomal protein S6 and eIF4B, resulting in stimulation of translation. Further findings demonstrated that activated mTOR signaling induces the association of eIF3 with eIF4G upon stimulation with insulin (3).

One of the smallest subunits of eIF3, eIF3J, is critical in 40S initiation complex assembly (5). eIF3J has been shown to associate with the aminoacyl site and mRNA entry channel of the 40S ribosomal subunit (6). eIF3J has also been shown to play an additional role in the recycling of post-termination complexes (7).

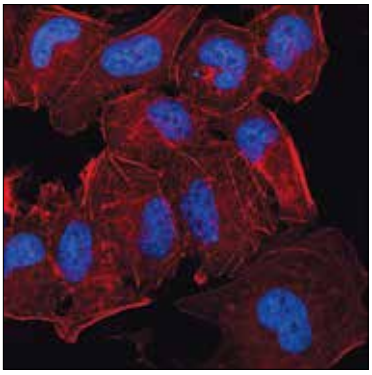
Specificity/Sensitivity: eIF3J (D21G7) XP® Rabbit mAb recognizes endogenous levels of total eIF3J protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val251 of human eIF3J protein.

mock transfected



siRNA transfected



Confocal immunofluorescent analysis of HeLa cells, mock transfected or transfected with eIF3J-specific siRNA, using eIF3J (D21G7) XP® Rabbit mAb (green). Actin filaments were labeled with DyLight™ 554 Phalloidin #13054 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

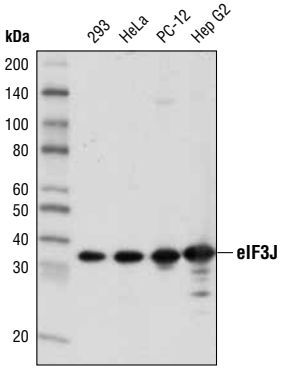
Western blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (IF-IC)	1:100

For product specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

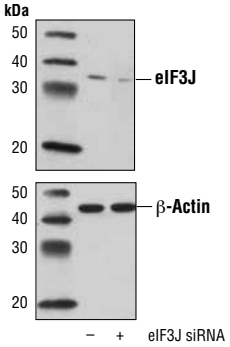
(1) Masutani, M. et al. (2007) *EMBO J* 26, 3373-83.
(2) Chaudhuri, J. et al. (1999) *J Biol Chem* 274, 17975-80.
(3) Holz, M.K. et al. (2005) *Cell* 123, 569-80.
(4) Harris, T.E. et al. (2006) *EMBO J* 25, 1659-68.
(5) Fraser, C.S. et al. (2004) *J Biol Chem* 279, 8946-56.
(6) Fraser, C.S. et al. (2007) *Mol Cell* 26, 811-9.
(7) Pisarev, A.V. et al. (2007) *Cell* 131, 286-99.



Western blot analysis of extracts from various cell lines using eIF3J (D21G7) XP® Rabbit mAb.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Western blot analysis of extracts from HeLa cells mock transfected or siRNA transfected using eIF3J (D21G7) XP® Rabbit mAb.