

#8161 Store at -20C

eIF3J (D21G7) XP® Rabbit mAb



Cell Signaling
TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IF-IC	H M R Mk	Endogenous	35	Rabbit IgG	#O75822	8669

Product Usage Information

Application

Western Blotting
Immunoprecipitation
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:50
1:100

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.

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.

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-tRNAⁱ.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).

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.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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