

eIF3A Antibody

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H M R Mk	Endogenous	166	Rabbit	#Q14152	8661

Product Usage Information**Application**

Western Blotting
Immunoprecipitation
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:50
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

eIF3A Antibody detects endogenous levels of total eIF3A protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to a sequence of human eIF3A. Antibodies are purified by peptide affinity chromatography.

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-tRNA^f.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).

Background References

- Masutani, M. et al. (2007) *EMBO J* 26, 3373-83.
- Chaudhuri, J. et al. (1999) *J Biol Chem* 274, 17975-80.
- Holz, M.K. et al. (2005) *Cell* 123, 569-80.
- Harris, T.E. et al. (2006) *EMBO J* 25, 1659-68.

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

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

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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