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Anti-EIF1 Antibody

Catalog # AP60274

Product Information

Application	WB, IF/IC
Primary Accession	P41567
Reactivity	Human, Mouse, Rat, Chicken, Bovine, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	12732

Additional Information

Gene ID	10209
Other Names	SUI1; Eukaryotic translation initiation factor 1; eIF1; A121; Protein translation factor SUI1 homolog; Sui1iso1
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human EIF1. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

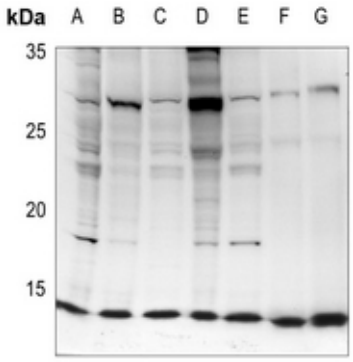
Protein Information

Name	EIF1
Synonyms	SUI1
Function	Component of the 43S pre-initiation complex (43S PIC), which binds to the mRNA cap-proximal region, scans mRNA 5'-untranslated region, and locates the initiation codon (PubMed:12435632, PubMed:14600024, PubMed:9732867). Together with eIF1A (EIF1AX), EIF1 facilitates scanning and is essential for start codon recognition on the basis of AUG nucleotide context and location relative to the 5'-cap (PubMed:12435632, PubMed:14600024, PubMed:9732867). Participates to initiation codon selection by influencing the conformation of the 40S ribosomal subunit and the positions of bound mRNA and initiator tRNA; this is possible after its binding to the interface surface of the platform of the 40S ribosomal subunit close to the P-site (PubMed:14600024). Together with eIF1A (EIF1AX), also regulates the opening and closing of the mRNA binding channel, which ensures mRNA recruitment, scanning and the fidelity of initiation codon selection (PubMed:9732867).

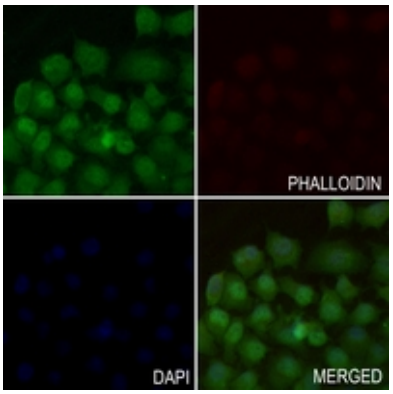
Continuously monitors and protects against premature and partial base-pairing of codons in the 5'-UTR with the anticodon of initiator tRNA (PubMed:12435632, PubMed:9732867). Together with eIF1A (EIF1AX), acts for ribosomal scanning, promotion of the assembly of 48S complex at the initiation codon (43S PIC becomes 48S PIC after the start codon is reached), and dissociation of aberrant complexes (PubMed:9732867). Interacts with EIF4G1, which in a mutual exclusive interaction associates either with EIF1 or with EIF4E on a common binding site (PubMed:29987188). EIF4G1-EIF1 complex promotes ribosome scanning (on both short and long 5'UTR), leaky scanning (on short 5'UTR) which is the bypass of the initial start codon, and discrimination against cap-proximal AUG (PubMed:29987188). Is probably maintained within the 43S PIC in open conformation thanks to eIF1A-EIF5 interaction (PubMed:24319994). Once the correct start codon is reached, EIF1 is physically excluded from the decoding site, shifting the PIC into the closed conformation and arresting it at the start codon (PubMed:22813744).

Cellular Location Cytoplasm.

Images



Western blot analysis of EIF1 expression in A549 (A), Raw264.7 (B), U87MG (C), THP1 (D), PC3 (E), rat lung (F), mouse spleen (G) whole cell lysates. (Predicted band size: 12 kD; Observed band size: 13 kD)



Immunofluorescent analysis of EIF1 staining in A549 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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