

**EIF2A Antibody**  
**Purified Mouse Monoclonal Antibody (Mab)**  
**Catalog # AM8703b**

### Specification

#### EIF2A Antibody - Product Information

Application	WB,E
Primary Accession	<a href="#">P05198</a>
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	monoclonal
Isotype	IgG2b,k

#### EIF2A Antibody - Additional Information

##### Gene ID 1965

##### Other Names

Eukaryotic translation initiation factor 2 subunit 1, Eukaryotic translation initiation factor 2 subunit alpha, eIF-2-alpha, eIF-2A, eIF-2alpha, EIF2S1, EIF2A

##### Target/Specificity

This EIF2A antibody is generated from a mouse immunized with a recombinant protein of human EIF2A.

##### Dilution

WB~~1:2000

E~~Use at an assay dependent concentration.

##### Format

Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.

##### Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

##### Precautions

EIF2A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

#### EIF2A Antibody - Protein Information

##### Name [EIF2S1 \(HGNC:3265\)](#)

##### Synonyms EIF2A

**Function** Member of the eIF2 complex that functions in the early steps of protein synthesis by forming a ternary complex with GTP and initiator tRNA (PubMed:[16289705](#), PubMed:[38340717](#)).

This complex binds to a 40S ribosomal subunit, followed by mRNA binding to form a 43S pre-initiation complex (43S PIC) (PubMed:[16289705](#)). Junction of the 60S ribosomal subunit to form the 80S initiation complex is preceded by hydrolysis of the GTP bound to eIF2 and release of an eIF2-GDP binary complex (PubMed:[16289705](#)). In order for eIF2 to recycle and catalyze another round of initiation, the GDP bound to eIF2 must exchange with GTP by way of a reaction catalyzed by eIF2B (PubMed:[16289705](#)). EIF2S1/eIF2-alpha is a key component of the integrated stress response (ISR), required for adaptation to various stress: phosphorylation by metabolic-stress sensing protein kinases (EIF2AK1/HRI, EIF2AK2/PKR, EIF2AK3/PERK and EIF2AK4/GCN2) in response to stress converts EIF2S1/eIF2-alpha in a global protein synthesis inhibitor, leading to an attenuation of cap-dependent translation, while concomitantly initiating the preferential translation of ISR-specific mRNAs, such as the transcriptional activators ATF4 and QRICH1, and hence allowing ATF4- and QRICH1-mediated reprogramming (PubMed:[19131336](#), PubMed:[33384352](#), PubMed:[38340717](#)). EIF2S1/eIF2-alpha also acts as an activator of mitophagy in response to mitochondrial damage: phosphorylation by EIF2AK1/HRI promotes relocalization to the mitochondrial surface, thereby triggering PRKN-independent mitophagy (PubMed:[38340717](#)).

### Cellular Location

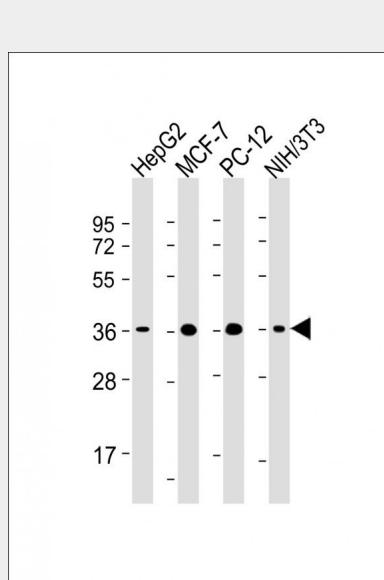
Cytoplasm, Stress granule {ECO:0000250|UniProtKB:Q6ZWX6}. Cytoplasm, cytosol {ECO:0000250|UniProtKB:P56286}. Mitochondrion. Note=Colocalizes with NANOS3 in the stress granules (By similarity). Relocalizes to the surface of mitochondria in response to mitochondrial damage and phosphorylation by EIF2AK1/HRI (PubMed:38340717). {ECO:0000250|UniProtKB:Q6ZWX6, ECO:0000269|PubMed:38340717}

### EIF2A Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### EIF2A Antibody - Images



All lanes : Anti-EIF2A Antibody at 1:2000 dilution Lane 1: HepG2 whole cell lysate Lane 2: MCF-7 whole cell lysate Lane 3: PC-12 whole cell lysate Lane 4: NIH/3T3 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 36 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

### **EIF2A Antibody - Background**

Functions in the early steps of protein synthesis by forming a ternary complex with GTP and initiator tRNA. This complex binds to a 40S ribosomal subunit, followed by mRNA binding to form a 43S preinitiation complex. Junction of the 60S ribosomal subunit to form the 80S initiation complex is preceded by hydrolysis of the GTP bound to eIF-2 and release of an eIF-2-GDP binary complex. In order for eIF-2 to recycle and catalyze another round of initiation, the GDP bound to eIF-2 must exchange with GTP by way of a reaction catalyzed by eIF-2B.

### **EIF2A Antibody - References**

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Langland J.O., et al. Virology 324:419-429(2004).  
Paytubi S., et al. Biochem. J. 409:223-231(2008).  
Montero H., et al. J. Virol. 82:1496-1504(2008).  
Mayya V., et al. Sci. Signal. 2:RA46-RA46(2009).