

**eIF2 $\alpha$  Antibody**  
**Purified Mouse Monoclonal Antibody (Mab)**  
**Catalog # AP52859****Specification**

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**eIF2 $\alpha$  Antibody - Product Information**

Application	<b>WB</b>
Primary Accession	<a href="#">P05198</a>
Reactivity	<b>Human</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Isotype	<b>IgG2b</b>
Calculated MW	<b>38 KDa</b>

**eIF2 $\alpha$  Antibody - Additional Information****Gene ID** 1965**Other Names**

Dmel\CG6376 ;Dmel\_CG6376 ;drosE2F1 ;E(Sev-CycE)3A ;E(var)3-93E ;E2-promoter binding facto  
;E2F 1 ;E2F transcription factor 1 ;E2F-1 ;E2f-PA ;E2f-PB ;E2f-PC ;E2F1 ;E2f1 E2F transcription  
factor 1 ;E2F1\_HUMAN ;Evar(3)164 ;KIAA4009 ;l(3)07172 ;l(3)j3B1 ;l(3)j3C2 ;l(3)rM729 ;mKIAA4009  
;OTTHUMP00000030661 ;PBR3 ;PRB binding protein E2F 1 ;PRB-binding protein E2F-1 ;RBAP 1  
;RBAP-1 ;RBAP1 ;RBBP-3 ;RBBP3 ;RBP 3 ;RBP3 ;Retinoblastoma-associated protein 1  
;Retinoblastoma-binding protein 3 ;Transcription factor E2F1.

**Format**

PBS(pH 7.4) containing with 0.09% (W/V) sodium azide and 50% glycerol.

**Storage**

Store at -20 °C. Stable for 12 months from date of receipt

**eIF2 $\alpha$  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: <a href="http://www.uniprot.org/citations/16289705" target="\_blank">16289705</a>, PubMed: <a href="http://www.uniprot.org/citations/38340717" target="\_blank">38340717</a>). This complex binds to a 40S ribosomal subunit, followed by mRNA binding to form a 43S pre- initiation complex (43S PIC) (PubMed: <a href="http://www.uniprot.org/citations/16289705" target="\_blank">16289705</a>). 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: <a href="http://www.uniprot.org/citations/16289705" target="\_blank">16289705</a>)

target="\_blank">16289705</a>). 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:<a href="http://www.uniprot.org/citations/16289705" target="\_blank">16289705</a>). 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:<a href="http://www.uniprot.org/citations/19131336" target="\_blank">19131336</a>, PubMed:<a href="http://www.uniprot.org/citations/33384352" target="\_blank">33384352</a>, PubMed:<a href="http://www.uniprot.org/citations/38340717" target="\_blank">38340717</a>). 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:<a href="http://www.uniprot.org/citations/38340717" target="\_blank">38340717</a>).

### 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}

### eIF2 $\alpha$ 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](#)

### eIF2 $\alpha$ Antibody - Images

### eIF2 $\alpha$ 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.

### eIF2 $\alpha$ Antibody - References

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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).