

**Phospho-eIF2A (Ser51) Rabbit mAb**  
**Catalog # AP74973****Specification****Phospho-eIF2A (Ser51) Rabbit mAb - Product Information**

Application	WB
Primary Accession	<a href="#">P05198</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Monoclonal Antibody
Calculated MW	36112

**Phospho-eIF2A (Ser51) Rabbit mAb - Additional Information****Gene ID** 1965**Other Names**  
EIF2S1**Dilution**  
WB~~1/500-1/1000**Format**  
50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.**Storage**  
Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.**Phospho-eIF2A (Ser51) Rabbit mAb - 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>). 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}

### Phospho-eIF2A (Ser51) Rabbit mAb - 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](#)

### Phospho-eIF2A (Ser51) Rabbit mAb - Images

