

**Anti-Phospho-EIF2S1 (S51) Rabbit Monoclonal Antibody**  
Catalog # ABO13155**Specification****Anti-Phospho-EIF2S1 (S51) Rabbit Monoclonal Antibody - Product Information**

|                   |                        |
|-------------------|------------------------|
| Application       | WB, IHC, IF, ICC, FC   |
| Primary Accession | <a href="#">P05198</a> |
| Host              | Rabbit                 |
| Isotype           | Rabbit IgG             |
| Reactivity        | Rat, Human, Mouse      |
| Clonality         | Monoclonal             |
| Format            | Liquid                 |

**Description**

Anti-Phospho-EIF2S1 (S51) Rabbit Monoclonal Antibody . Tested in WB, IHC, ICC/IF, Flow Cytometry applications. This antibody reacts with Human, Mouse, Rat.

**Anti-Phospho-EIF2S1 (S51) Rabbit Monoclonal 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, eIF2-alpha, EIF2S1 ([HGNC:3265](http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=3265)), EIF2A

**Calculated MW**

36112 MW KDa

**Application Details**

WB 1:500-1:2000<br>IHC 1:50-1:200<br>ICC/IF 1:50-1:200<br>FC 1:40

**Subcellular Localization**

Cytoplasmic granule. The cytoplasmic granules are stress granules which are a dense aggregation in the cytosol composed of proteins and RNAs that appear when the cell is under stress. Colocalizes with NANOS3 in the stress granules (By similarity)..

**Contents**

Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

**Immunogen**

A synthesized peptide derived from human Phospho-EIF2S1 (S51)

**Purification**

Affinity-chromatography

**Storage**

**Store at -20°C for one year. For short term storage and frequent use, store at 4°C for**

up to one month. Avoid repeated  
freeze-thaw cycles.

## Anti-Phospho-EIF2S1 (S51) Rabbit Monoclonal 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](http://www.uniprot.org/citations/16289705), PubMed: [38340717](http://www.uniprot.org/citations/38340717)). This complex binds to a 40S ribosomal subunit, followed by mRNA binding to form a 43S pre- initiation complex (43S PIC) (PubMed: [16289705](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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 QRI1, and hence allowing ATF4- and QRI1-mediated reprogramming (PubMed: [19131336](http://www.uniprot.org/citations/19131336), PubMed: [33384352](http://www.uniprot.org/citations/33384352), PubMed: [38340717](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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}

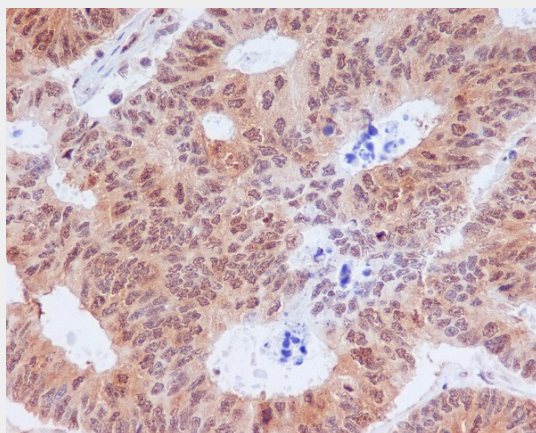
## Anti-Phospho-EIF2S1 (S51) Rabbit Monoclonal Antibody - Protocols

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

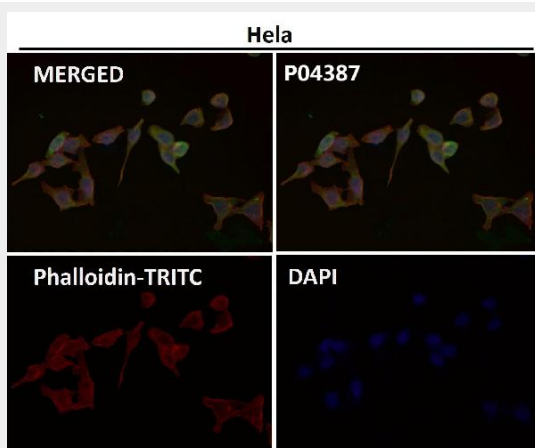
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)

- [Cell Culture](#)

### Anti-Phospho-EIF2S1 (S51) Rabbit Monoclonal Antibody - Images



Immunohistochemical analysis of paraffin-embedded human colon cancer, using Phospho-eIF2 alpha (Ser51) Antibody.



Immunofluorescent analysis using the Antibody at 1:50 dilution.

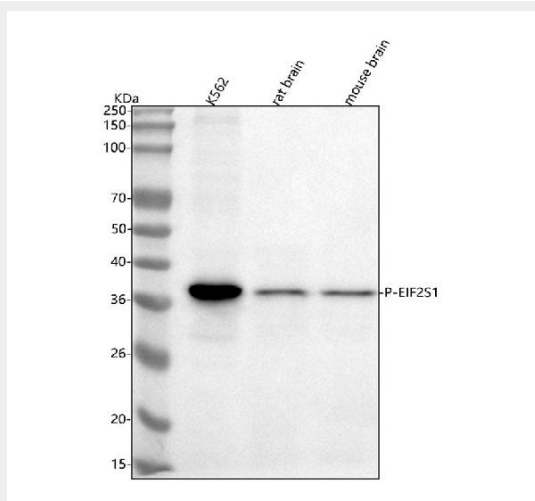


Figure 1. Western blot analysis of EIF2S1 using anti-EIF2S1 antibody (P04387). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing

conditions.

Lane 1: human K562 whole cell lysates,

Lane 2: rat brain tissue lysates,

Lane 3: mouse brain tissue lysates.

After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-EIF2S1 antigen affinity purified monoclonal antibody (Catalog # P04387) at 1:500 overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:500 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for EIF2S1 at approximately 36 kDa. The expected band size for EIF2S1 is at 36 kDa.