

## eIF2α Polyclonal Antibody

**Catalog # AP69690** 

## **Specification**

## eIF2α Polyclonal Antibody - Product Information

Application WB, IHC-P, IF

Primary Accession
Reactivity
P05198
Human

Reactivity
Host
Clonality
Human, Mouse, Rat, Monkey
Rabbit
Polyclonal

# eIF2α Polyclonal Antibody - Additional Information

### **Gene ID 1965**

#### **Other Names**

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

#### **Dilution**

WB $\sim\sim$ IF: 1:50-200 Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/10000. Not yet tested in other applications.

IHC-P~~N/A

IF $\sim$ IF: 1:50-200 Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/10000. Not yet tested in other applications.

### **Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

### **Storage Conditions**

-20°C

### eIF2α Polyclonal 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>). 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>/a>, PubMed:<a href="http://www.uniprot.org/citations/33384352"

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**

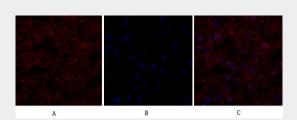
Cytoplasm, Stress granule {ECO:0000250|UniProtKB:Q6ZWX6}. Cytoplasm, cytosol {ECO:0000250|UniProtKB:P56286}. Mitochondrion. Note=Colocalizes with NANOS3 in the stress granules (By similarity). Relocalizes to the surface of mitochondria in response to mitochondrial damage and phosphorylation by EIF2AK1/HRI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

## eIF2α Polyclonal Antibody - Protocols

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

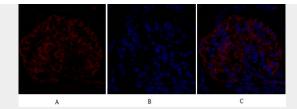
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

## eIF2α Polyclonal Antibody - Images

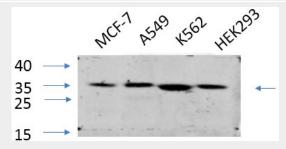


Immunofluorescence analysis of human-liver tissue. 1,eIF2 $\alpha$  Polyclonal Antibody(red) was diluted at 1:200(4°C,overnight). 2, Cy3 labled Secondary antibody was diluted at 1:300(room temperature, 50min).3, Picture B: DAPI(blue) 10min. Picture A:Target. Picture B: DAPI. Picture C: merge of A+B

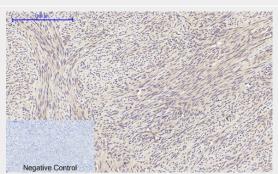




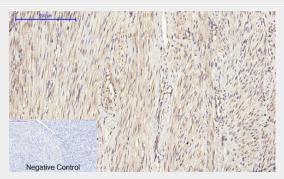
Immunofluorescence analysis of rat-kidney tissue.  $1,eIF2\alpha$  Polyclonal Antibody(red) was diluted at  $1:200(4^{\circ}C, overnight)$ . 2, Cy3 labled Secondary antibody was diluted at  $1:300(room\ temperature, 50min)$ . 3, Picture B: DAPI(blue) 10min. Picture A:Target. Picture B: DAPI. Picture C: merge of A+B



Western Blot analysis of various cells using primary antibody diluted at 1:1000(4°C overnight). Secondary antibody Goat Anti-rabbit IgG IRDye 800( diluted at 1:5000, 25°C, 1 hour). Cell lysate was extracted by Minute™ Plasma Membrane Protein Isolation and Cell Fractionation Kit(SM-005, Inventbiotech, MN, USA).

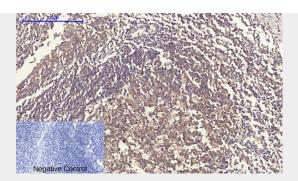


Immunohistochemical analysis of paraffin-embedded Human-uterus tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}\text{C,overnight})$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98 $^{\circ}\text{C,20min}$ ). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

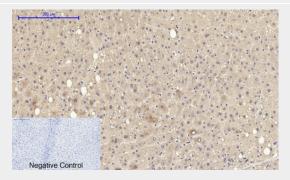


Immunohistochemical analysis of paraffin-embedded Human-uterus-cancer tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

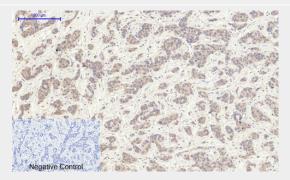




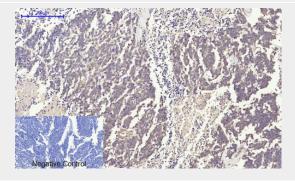
Immunohistochemical analysis of paraffin-embedded Human-Tonsil tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}\text{C,overnight})$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Human-liver tissue. 1,eIF2α Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

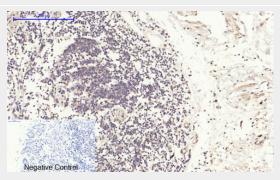


Immunohistochemical analysis of paraffin-embedded Human-liver-cancer tissue. 1,eIF2α Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

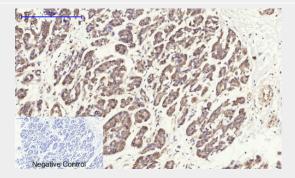




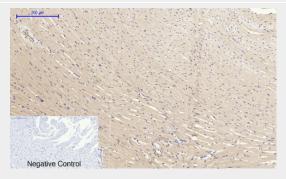
Immunohistochemical analysis of paraffin-embedded Human-lung-cancer tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Human-stomach tissue.  $1,eIF2\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}C,overnight)$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at  $1:200(room\ tempeRature,\ 30min)$ . Negative control was used by secondary antibody only.

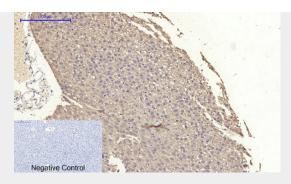


Immunohistochemical analysis of paraffin-embedded Human-stomach-cancer tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

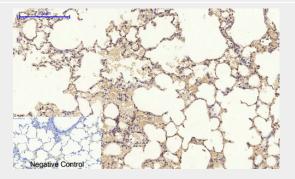


Immunohistochemical analysis of paraffin-embedded Rat-heart tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

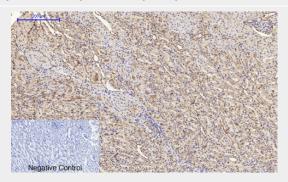




Immunohistochemical analysis of paraffin-embedded Rat-liver tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Rat-lung tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

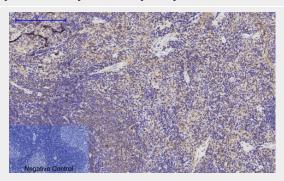


Immunohistochemical analysis of paraffin-embedded Rat-kidney tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}\text{C,overnight})$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

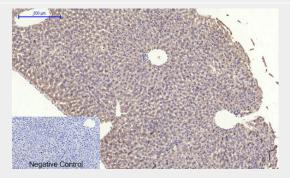




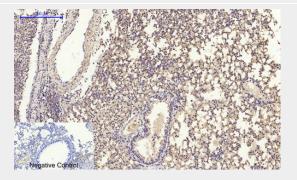
Immunohistochemical analysis of paraffin-embedded Rat-brain tissue. 1,eIF2α Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Rat-spleen tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}\text{C,overnight})$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

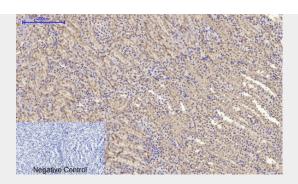


Immunohistochemical analysis of paraffin-embedded Mouse-liver tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}\text{C,overnight})$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

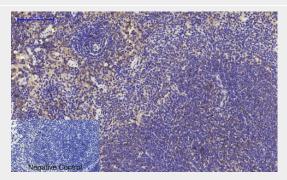


Immunohistochemical analysis of paraffin-embedded Mouse-lung tissue. 1,eIF2α Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

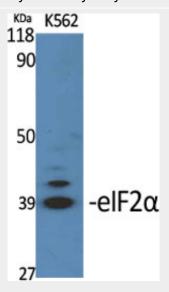




Immunohistochemical analysis of paraffin-embedded Mouse-kidney tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}\text{C,overnight})$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.

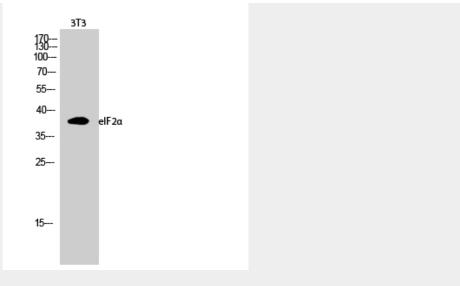


Immunohistochemical analysis of paraffin-embedded Mouse-spleen tissue. 1,eIF2 $\alpha$  Polyclonal Antibody was diluted at  $1:200(4^{\circ}\text{C,overnight})$ . 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room tempeRature, 30min). Negative control was used by secondary antibody only.



Western Blot analysis of various cells using eIF2α Polyclonal Antibody diluted at 1□2000





Western Blot analysis of 3T3 cells using eIF2α Polyclonal Antibody diluted at 1□2000

# eIF2α Polyclonal 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 pre-initiation 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.