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Anti-EIF2S1 Antibody
Catalog # ABO11336

Specification

Anti-EIF2S1 Antibody - Product Information

Application	**WB, IHC**
Primary Accession	P05198
Host	**Rabbit**
Reactivity	**Human**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Eukaryotic translation initiation factor 2 subunit 1(EIF2S1) detection. Tested with WB, IHC-P in Human.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-EIF2S1 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

Calculated MW
36112 MW KDa

Application Details
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, By Heat
Western blot, 0.1-0.5 µg/ml, Human

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). .

Protein Name
Eukaryotic translation initiation factor 2 subunit 1

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence in the middle region of human EIF2S1(123-137aa KDEQLESLFQRTAWV).

Purification

Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage

At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities
Belongs to the eIF-2-alpha family.

Anti-EIF2S1 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}

Anti-EIF2S1 Antibody - Protocols

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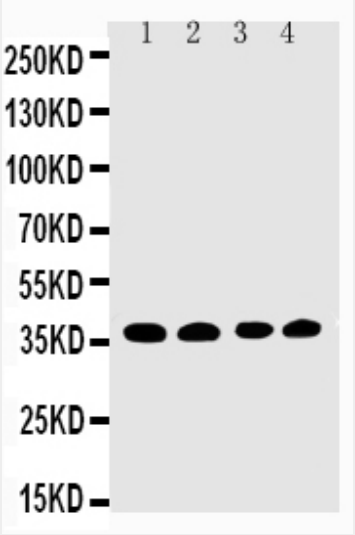
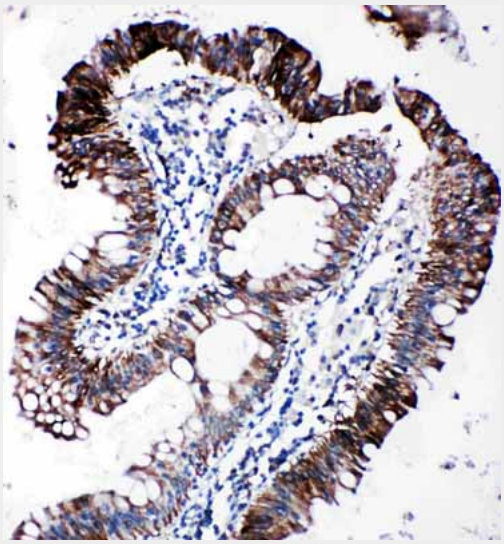
Provided below are standard protocols that you may find useful for product applications.

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

Anti-EIF2S1 Antibody - Images



Anti-EIF2S1 antibody, ABO11336, Western blottingLane 1: COLO320 Cell LysateLane 2: CEM Cell LysateLane 3: RAJI Cell LysateLane 4: HT1080 Cell Lysate



Anti-EIF2S1 antibody, ABO11336, IHC(P)IHC(P): Human Intestinal Cancer Tissue

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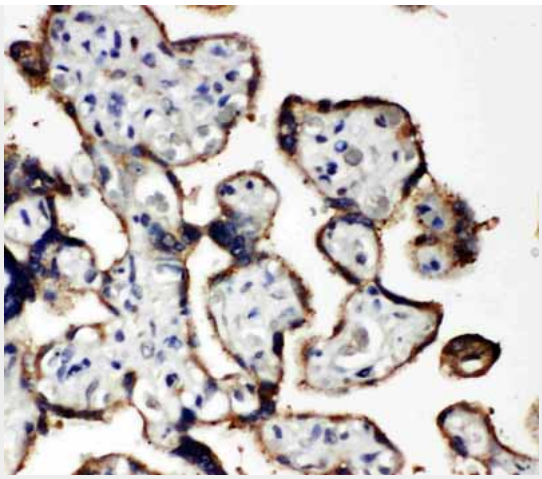

Anti-EIF2S1 antibody, ABO11336, IHC(P)IHC(P): Human Placenta Tissue

Anti-EIF2S1 Antibody - Background

EIF2S1(Eukaryotic Translation Initiation Factor 2, Subunit 1), also called EIF2-alpha, is a protein that in humans is encoded by the EIF2S1 gene. Hartz(2010) mapped the EIF2S1 gene to chromosome 14q23.3 based on an alignment of the EIF2S1 sequence with the genomic sequence(GRCh37). Ernst et al.(1987) stated that protein synthesis is inhibited due to phosphorylation of Eif2-alpha in hemin-deprived rabbit reticulocyte lysates. HeLa cells subjected to heat shock, serum deprivation, or interferon treatment followed by virus infection also show a correlation between EIF2-alpha phosphorylation and translational repression. Jacob et al.(1989) found that the alpha-Pal transcription factor bound to 2 palindromic sites within the EIF2-alpha promoter and was essential for transcription of the EIF2-alpha gene.