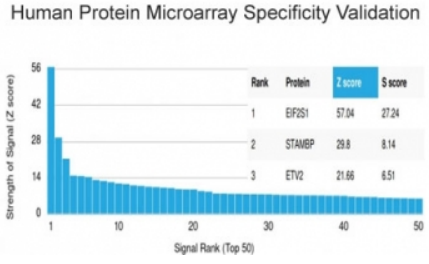
# EIF2S1 Antibody / eIF2 Alpha Translation Initiation Marker [clone PCRP-EIF2S1-1C11] (V9225)

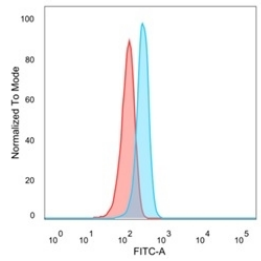
| Catalog No. | Formulation | Size |
|---|---|---|
| V9225-100UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide | 100 ug |
| V9225-20UG | 0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide | 20 ug |
| V9225SAF-100UG | 1 mg/ml in 1X PBS; BSA free, sodium azide free | 100 ug |

**Bulk quote request**

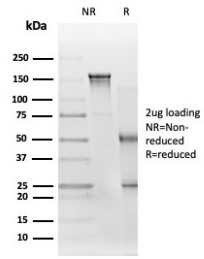
| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Format** | Purified |
| **Host** | Mouse |
| **Clonality** | Monoclonal (mouse origin) |
| **Isotype** | Mouse IgG2a |
| **Clone Name** | PCRP-EIF2S1-1C11 |
| **Purity** | Protein A/G affinity |
| **UniProt** | P05198 |
| **Localization** | Nucleus |
| **Applications** | Flow Cytometry : 1-2ug/million cells |
| **Limitations** | This EIF2S1 Antibody / eIF2 Alpha Translation Initiation Marker is available for research use only. |




EIF2S1 Antibody HuProt Microarray. Analysis of a HuProt(TM) microarray containing more than 19,000 full-length human proteins using EIF2S1 antibody detecting eIF2 alpha, clone PCRP-EIF2S1-1C11. The antibody shows a strong and specific signal for EIF2S1 with an elevated Z-score and clear separation from lower-ranked proteins, resulting in an S-score consistent with target specificity. Z-score represents signal intensity in standard deviations above the array mean, while S-score reflects the difference between the top-ranked target and subsequent signals, indicating relative binding specificity of the monoclonal antibody.




EIF2S1 Antibody HeLa FACS. Flow cytometry analysis of PFA-fixed human HeLa cells stained with EIF2S1 antibody detecting eIF2 alpha, clone PCRP-EIF2S1-1C11. The antibody signal (blue) shows a rightward shift relative to the isotype control (red), indicating positive intracellular detection of EIF2S1 following fixation and permeabilization. This staining pattern is consistent with EIF2S1 as a cytoplasmic translation initiation factor associated with ribosome-mediated protein synthesis.




SDS-PAGE analysis of purified, BSA-free EIF2S1 antibody (clone PCRP-EIF2S1-1C11) as confirmation of integrity and purity.

## Description

Eukaryotic initiation factor 2 subunit 1 (EIF2S1), commonly referred to as eIF2 alpha, is a central component of the translation initiation machinery and a key regulator of protein synthesis. EIF2S1 Antibody, clone PCRP-EIF2S1-1C11, is a mouse monoclonal antibody developed to detect this protein, enabling analysis of translation initiation and cellular protein production under a range of physiological conditions.

EIF2S1 functions as part of the heterotrimeric eIF2 complex, which plays a critical role in delivering initiator methionyl-tRNA to the ribosome during the early stages of translation. This process is essential for accurate start codon recognition and efficient protein synthesis. Under normal conditions, EIF2S1 supports robust translation activity, maintaining cellular growth and homeostasis through continuous protein production.

A key regulatory feature of EIF2S1 is its control by phosphorylation, particularly at Ser51, which modulates the activity of the eIF2 complex. In response to stress signals such as nutrient deprivation, viral infection, or endoplasmic reticulum stress, phosphorylation of EIF2S1 leads to inhibition of translation initiation and a reduction in global protein synthesis. This allows cells to conserve resources and prioritize the translation of stress-response genes required for adaptation and survival.

In contrast to alternative initiation factors such as EIF2A, which support non-canonical translation pathways, EIF2S1 operates within the primary translation initiation system and directly regulates overall protein synthesis rates. Detection of EIF2S1 provides insight into the baseline translational capacity of cells and can be used to assess changes in protein synthesis under different experimental conditions.

EIF2S1 is predominantly localized in the cytoplasm, where it associates with ribosomes and translation initiation complexes. Immunofluorescence studies typically reveal diffuse cytoplasmic staining, reflecting its role in protein synthesis. Under stress conditions, EIF2S1 may also be associated with stress granules and other ribonucleoprotein assemblies involved in translational regulation, indicating shifts in cellular translation dynamics.

EIF2S1 is widely expressed across tissues and cell types, highlighting its fundamental role in cellular function. Dysregulation of EIF2S1 signaling has been implicated in cancer, neurodegenerative diseases, and metabolic disorders, where altered protein synthesis contributes to disease progression. These features support the use of an EIF2S1 Antibody in studies of translation initiation, cellular stress responses, and disease-associated changes in protein synthesis.

As a complementary reagent to other EIF2S1 antibodies, clone PCRP-EIF2S1-1C11 provides an additional tool for

detecting eIF2 alpha across different applications and experimental systems. Detection of EIF2S1 using this antibody supports investigation of translational regulation, cellular adaptation, and protein synthesis control mechanisms.

For microarray-validated specificity and expanded application data, see our EIF2S1 Antibody (PCRP-EIF2S1-1E2) page.

## Application Notes

Optimal dilution of the EIF2S1 Antibody / eIF2 Alpha Translation Initiation Marker should be determined by the researcher.

## Immunogen

Recombinant full-length human EIF2S1/EIF2A protein was used as the immunogen for the EIF2S1 antibody.

## Storage

Aliquot the EIF2S1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

## Alternate Names

EIF2S1 antibody, eIF2 alpha antibody, Eukaryotic initiation factor 2 subunit 1 antibody, eIF2Î± antibody, EIF2 alpha protein antibody, clone PCRP-EIF2S1-1C11 antibody