

eIF2 α (FL-315): sc-11386

BACKGROUND

The initiation of protein synthesis in eukaryotic cells is regulated by interactions between protein initiation factors and RNA molecules. The eukaryotic initiation complex is composed of three subunits, designated eIF2 α , eIF2 β and eIF2 γ (eukaryotic translation initiation factor 2 α , β and γ , respectively), all of which work in concert to form a ternary complex with GTP and tRNA in the early stages of protein synthesis. eIF2 α , also known as EIF2S1 or EIF2, is a 315 amino acid subunit of the eukaryotic initiation complex that functions to bind tRNA to the 40S ribosomal subunit (in a GTP-dependent manner), thereby initiating translation. In addition, the phosphorylation state of eIF2 α controls the rate of tRNA translation. When eIF2 α is not phosphorylated, translation occurs at a normal rate. However, upon phosphorylation by one of several kinases, eIF2 α is stabilized, thus preventing the GDP/GTP exchange reaction and slowing translation.

CHROMOSOMAL LOCATION

Genetic locus: EIF2S1 (human) mapping to 14q23.3; Eif2s1 (mouse) mapping to 12 C3.

SOURCE

eIF2 α (FL-315) is a rabbit polyclonal antibody raised against amino acids 1-315 representing full length eIF2 α of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

eIF2 α (FL-315) is recommended for detection of eIF2 α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

eIF2 α (FL-315) is also recommended for detection of eIF2 α in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for eIF2 α siRNA (h): sc-35272, eIF2 α siRNA (m): sc-35273, eIF2 α shRNA Plasmid (h): sc-35272-SH, eIF2 α shRNA Plasmid (m): sc-35273-SH, eIF2 α shRNA (h) Lentiviral Particles: sc-35272-V and eIF2 α shRNA (m) Lentiviral Particles: sc-35273-V.

Molecular Weight of eIF2 α : 36 kDa.

Positive Controls: eIF2 α (m): 293T Lysate: sc-119967, K-562 whole cell lysate: sc-2203 or NIH/3T3 whole cell lysate: sc-2210.

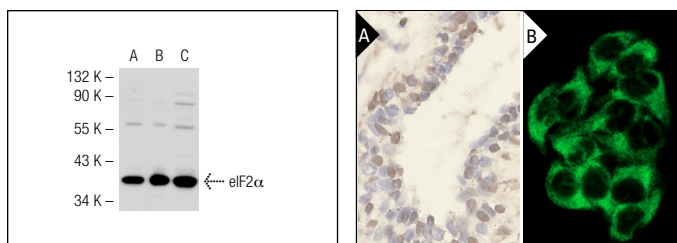
STORAGE

Store at 4 $^{\circ}$ C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



eIF2 α (FL-315): sc-11386. Western blot analysis of eIF2 α expression in non-transfected 293T: sc-117752 (A), mouse eIF2 α transfected 293T: sc-119967 (B) and K-562 (C) whole cell lysates.

eIF2 α (FL-315): sc-11386. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast tissue showing nuclear and cytoplasmic staining (A). Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

- Pang, Q., et al. 2002. The anti-apoptotic function of HSP 70 in the interferon-inducible double-stranded RNA-dependent protein kinase-mediated death signaling pathway requires the Fanconi anemia protein, FANCC. *J. Biol. Chem.* 277: 49638-49643.
- Coëffier, M., et al. 2011. Influence of leucine on protein metabolism, phosphokinase expression, and cell proliferation in human duodenum1,3. *Am. J. Clin. Nutr.* 93: 1255-1262.
- Farmaki, E., et al. 2011. ERp29 regulates response to doxorubicin by a PERK-mediated mechanism. *Biochim. Biophys. Acta* 1813: 1165-1171.
- Redondo, N., et al. 2011. Translation without eIF2 promoted by poliovirus 2A protease. *PLoS ONE* 6: e25699.
- Fatma, N., et al. 2011. Deficiency of Prdx6 in lens epithelial cells induces ER stress response-mediated impaired homeostasis and apoptosis. *Am. J. Physiol., Cell Physiol.* 301: C954-C967.
- Miranda, S., et al. 2012. Beneficial effects of fenofibrate in retinal pigment epithelium by the modulation of stress and survival signaling under diabetic conditions. *J. Cell. Physiol.* 227: 2352-2362.
- Dai, R., et al. 2012. Activation of PKR/eIF2 α signaling cascade is associated with dihydrotestosterone-induced cell cycle arrest and apoptosis in human liver cells. *J. Cell. Biochem.* 113: 1800-1808.
- Qian, Z., et al. 2012. Murine cytomegalovirus targets transcription factor ATF4 to exploit the unfolded-protein response. *J. Virol.* 86: 6712-6723.
- Martínez-Reyes, I., et al. 2012. AMPK and GCN2-ATF4 signal the repression of mitochondria in colon cancer cells. *Biochem. J.* 444: 249-259.



Try **eIF2 α (D-3): sc-133132** or **eIF2 α (G-12): sc-133227**, our highly recommended monoclonal alternatives to eIF2 α (FL-315). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **eIF2 α (D-3): sc-133132**.