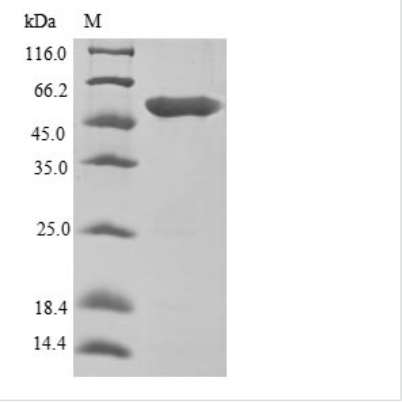
Recombinant Human Elongation factor 1-alpha 1 (EEF1A1)

Product Code	CSB-EP007409HUa0
Relevance	This protein promotes the GTP-dependent binding of aminoacyl-tRNA to the A-site of ribosomes during protein biosynthesis. With PARP1 and TXK, forms a complex that acts as a T helper 1 (Th1) cell-specific transcription factor and binds the promoter of IFN-gamma to directly regulate its transcription, and is thus involved importantly in Th1 cytokine production.
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P68104
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MGKEKTHINIVVIGHVDSGKSTTTGHLIYKCGGIDKRTIEKFEKEAAEMGKGSFK YAWVLDKLKAERERGITIDISLWKFETSKYYVTIIDAPGHRDFIKNMITGTSQAD CAVLIVAAGVGEFEAGISKNGQTREHALLAYTLGVKQLIVGVNKMDSTEPPYSQ KRYEEIVKEVSTYIKKIGYNPDTVAFVPISGWNGDNMLEPSANMPWFKGWKVT RKDGNASGTTLLEALDCILPPTRPTDKPLRLPLQDVYKIGGIGTVPVGRVETGV LKPGMVVTFAPVNVTTEVKSVEMHHEALSEALPGDNVGFNVKNVSVKDVRRG NVAGDSKNDPPMEAAGFTAQVIILNHPGQISAGYAPVLDCHTAHIACKFAELKE KIDRRSGKKLEDGPKFLKSGDAAIVDMVPGKPMCVESFSDYPPLGRFAVRDM RQTVAVGVIKAVDKKAAGAGKVTKSAQKAQKAK
Lead Time	3-7 business days
Research Area	Epigenetics and Nuclear Signaling
Source	E.coli
Gene Names	EEF1A1
Protein Names	Elongation factor Tu Short name: EF-Tu Eukaryotic elongation factor 1 A-1 Short name: eEF1A-1 Leukocyte receptor cluster member 7 EEF1A, EF1A, LENG7
Expression Region	1-462aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	54.1 kDa
Protein Description	Full Length

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The production of recombinant human EEF1A1 protein involves manipulating the expression of the desired gene in E.coli cells. The sequence (1-462aa) of foreign DNA is merged with an expression vector along with the N-terminal 6xHis-tag gene and subsequently introduced into E.coli cells. Positive cells are chosen and cultivated to induce the expression of the desired protein. The resulting recombinant human EEF1A1 protein undergoes purification through affinity purification, with a purity exceeding 85%, as confirmed by SDS-PAGE.

EEF1A1, a member of the eukaryotic elongation factor family, is responsible for delivering aminoacyl-tRNA to the ribosome during translation [1]. It is important in protein synthesis. This protein plays a significant role in peptide chain extension, promoting protein synthesis and regulating the elongation phase of translation [2]. EEF1A1 can also regulate the cell cycle, proliferation, and apoptosis [3].

EEF1A1 is associated with various diseases and conditions. For instance, studies have linked EEF1A1 to cancer progression, with overexpression of EEF1A1 being correlated with poor prognosis in colorectal cancer and hepatocellular carcinoma [4][5]. EEF1A1 inhibits apoptosis and chemotherapy sensitivity in certain cancer types [6].

References:
[1] Q. Hu, L. Ning, Z. Yu, G. Dou, & L. Li, Proteomic identification of eef1a1 as a molecular target of curcumol for suppressing metastasis of mda-mb-231 cells, Journal of Agricultural and Food Chemistry, vol. 65, no. 14, p. 3074-3082, 2017. https://doi.org/10.1021/acs.jafc.7b00573
[2] X. Liu, L. Chen, G. Jin, C. Yan, Z. Huang, J. Huet al., The ubiquitin-like protein fat10 stabilizes eef1a1 expression to promote tumor proliferation in a complex manner, Cancer Research, vol. 76, no. 16, p. 4897-4907, 2016. https://doi.org/10.1158/0008-5472.can-15-3118
[3] S. Xu, W. XiaoQian, X. Zhang, C. Chen, H. Chen, & F. She, Caga orchestrates eef1a1 and pkcδ to induce interleukin-6 expression in helicobacter pylori-infected gastric epithelial cells, Gut Pathogens, vol. 12, no. 1, 2020. https://doi.org/10.1186/s13099-020-00368-3
[4] A. Fan, X. Zhao, H. Líu, D. Li, T. Guo, J. Zhanget al., eef1a1 promotes colorectal cancer progression and predicts poor prognosis of patients, Cancer

Medicine, vol. 12, no. 1, p. 513-524, 2022. https://doi.org/10.1002/cam4.4848
[5] S. Chen, S. Lu, L. Liu, C. Wang, X. Yang, Z. Zhanget al., Eef1a1 overexpression enhances tumor progression and indicates poor prognosis in hepatocellular carcinoma, Translational Oncology, vol. 11, no. 1, p. 125-131, 2018. https://doi.org/10.1016/j.tranon.2017.11.001
[6] Á. Blanch, F. Robinson, I. Watson, L. Cheng, & M. Irwin, Eukaryotic translation elongation factor 1-alpha 1 inhibits p53 and p73 dependent apoptosis and chemotherapy sensitivity, Plos One, vol. 8, no. 6, p. e66436, 2013. https://doi.org/10.1371/journal.pone.0066436

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.