

EIF1 Protein, Human (GST)

Cat. No.:	HY-P700519
Synonyms:	eukaryotic translation initiation factor 1; A121; EIF 1; EIF1A; ISO1; SUI1; EIF-1;
Species:	Human
Source:	E. coli
Accession:	P41567 (M1-F113)
Gene ID:	10209
Molecular Weight:	39.7 kDa

PROPERTIES

AA Sequence	<pre> MSAIQNLHSF DPFADASKGD DLLPAGTEDY IHIRIQQRNG RKTLLTTVQGI ADDYDKKKLV KAFKKKFACN GTVIEHPEYG EVIQLQGDR KNICQFLVEI GLAKDDQLKV HGF </pre>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of Tris/PBS-based buffer, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>EIF1 is a vital component of the 43S pre-initiation complex (43S PIC) and plays a crucial role in the intricate process of translation initiation. As part of the 43S PIC, EIF1 binds to the mRNA cap-proximal region, engages in mRNA scanning, and precisely locates the initiation codon. Teaming up with eIF1A (EIF1AX), EIF1 is indispensable for the recognition of the start codon, dependent on the AUG nucleotide context and its position relative to the 5'-cap. EIF1 actively contributes to initiation codon selection by influencing the conformation of the 40S ribosomal subunit and the positioning of the bound mRNA and initiator tRNA. It regulates the opening and closing of the mRNA binding channel, ensuring mRNA recruitment, scanning, and the accuracy of initiation codon selection. Continuously surveilling and guarding against premature and partial base-pairing of codons in the 5'-UTR with the anticodon of the initiator tRNA, EIF1, together with eIF1A (EIF1AX), orchestrates ribosomal scanning, promotes the assembly of the 48S complex at the initiation codon, and facilitates the dissociation of aberrant complexes. Interaction with EIF4G1 supports ribosome scanning, leaky scanning, and</p>
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discrimination against cap-proximal AUG. Maintaining an open conformation within the 43S PIC through interaction with EIF1A-EIF5, EIF1 undergoes a conformational shift upon reaching the correct start codon, moving the PIC into a closed conformation and halting it at the start codon. This multifaceted role highlights EIF1's essential contributions to the precision and fidelity of translation initiation.

Caution: Product has not been fully validated for medical applications. For research use only.

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