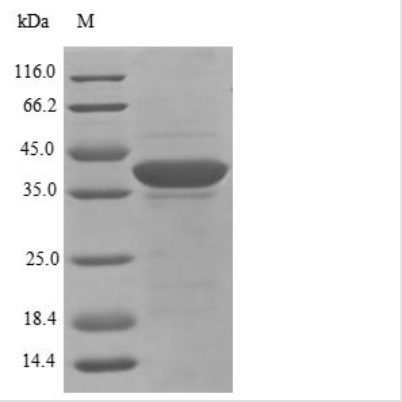
Recombinant Rat Eukaryotic translation initiation factor 3 subunit I (Eif3i)

Product Code	CSB-EP007538RA
Abbreviation	Recombinant Rat Eif3i protein
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.	B0BNA7
Product Type	Recombinant Protein
Immunogen Species	Rattus norvegicus (Rat)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MKPILLQGHERSITQIKYNREGDLLFTVAKDPIVNVWYSVNGERLGTYMGHTG AVWCVDADWDTKHVLTGSADNSCRLWDCETGKQLALLKTNSAVRTCGFDFG GNIIMFSTDKQMGYQCFVSFFDLRDPSQIDSNEPYMKIPCNDSKITSAVWGPL GECIIAGHESGELNQYSAKSGEVLVNVKEHSRQINDIQLSRDMTMFVTASKDN TAKLFDSTSLEHQKTFRTERPVNSAALSPNYDHVVLGGGQEAMDVTTTSTRIG KFEARFFHLAFEEEFGRVKGHFGPINSVAFHPDGKSYSSGGEDGYVRIHYFDP QYFEFEFEA
Research Area	Epigenetics and Nuclear Signaling
Source	E.coli
Target Names	Eif3i
Protein Names	Recommended name: Eukaryotic translation initiation factor 3 subunit I Short name= eIF3i Alternative name(s): Eukaryotic translation initiation factor 3 subunit 2 eIF-3-beta eIF3 p36
Expression Region	1-325aa
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	40.5 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Rat Eukaryotic translation initiation factor 3 subunit I (Eif3i) is produced in E. coli and represents the complete protein sequence from amino acids 1-325. The protein carries an N-terminal 6xHis tag, which makes purification and detection more straightforward. SDS-PAGE analysis confirms purity levels above 85%, suggesting this protein should work well for research applications that demand high-quality samples.

Eukaryotic translation initiation factor 3 subunit I (Eif3i) appears to be an integral component of the eIF3 complex, which seems critical during the early stages of protein synthesis. Within this complex, Eif3i likely helps coordinate the assembly of the 40S ribosomal subunit with messenger RNA and various initiation factors. This process may influence how cells regulate translation initiation and control overall protein production.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Protein-Protein Interaction Studies for Translation Initiation Complex Assembly

Researchers can use this recombinant Eif3i protein to explore how it interacts with other translation initiation factors and ribosomal components. Co-immunoprecipitation or pull-down assays work well here, taking advantage of that N-terminal 6xHis tag. Scientists can attach the protein to nickel-affinity resins and then fish out binding partners from cell lysates or other purified protein mixtures. These experiments might reveal how translation initiation complexes actually form and what subunit I specifically does within the larger EIF3 machinery. Since this protein spans the full 1-325 amino acid sequence, all the important interaction regions should remain intact.

2. Antibody Development and Validation

The purified recombinant rat Eif3i protein works as an effective antigen for

creating antibodies that specifically recognize this translation factor. Its high purity (over 85%) and complete sequence make it a good candidate for animal immunization, whether the goal is polyclonal antibodies or monoclonal screening. That 6xHis tag proves handy for ELISA-based screening to pick out antibodies with strong specificity and binding strength. Such antibodies could become valuable tools for Western blots, immunoprecipitation experiments, and immunofluorescence work with native Eif3i in rat tissues and cultured cells.

3. Biochemical Characterization and Structural Studies

This recombinant protein opens doors for thorough biochemical analysis, including tests of protein stability, folding behavior, and potential post-translational modifications. The 6xHis tag simplifies purification for biophysical techniques like dynamic light scattering, circular dichroism spectroscopy, or analytical ultracentrifugation - all useful for understanding how the protein might form complexes and what shape it takes in solution. Scientists could also try crystallizing this protein or running NMR experiments to work out the three-dimensional structure of rat Eif3i. Expression in E. coli typically yields enough material for these structure-function studies.

4. In Vitro Translation Assay Development

Researchers may be able to add this recombinant Eif3i protein to cell-free translation systems to see how it contributes to protein synthesis initiation. One approach involves removing natural EIF3 complexes from systems like rabbit reticulocyte lysates or wheat germ extracts, then adding back individual EIF3 subunits (including this Eif3i) to restore translation activity. These reconstruction experiments could help identify which subunits are absolutely necessary for EIF3 function and how the complex actually assembles. The protein might also be useful for comparing how translation machinery works across different species - contrasting rat Eif3i with similar proteins from other organisms.

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.
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