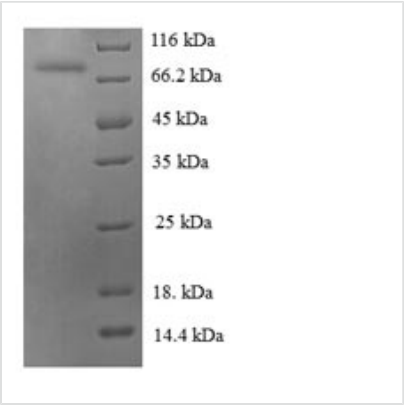
Recombinant Human Heat shock 70 kDa protein 6 (HSPA6), partial

Product Code	CSB-EP863082HU
Relevance	In cooperation with other chaperones, Hsp70s stabilize preexistent proteins against aggregation and mediate the folding of newly translated polypeptides in the cytosol as well as within organelles. These chaperones participate in all these processes through their ability to recognize nonnative conformations of other proteins. They bind extended peptide segments with a net hydrophobic character exposed by polypeptides during translation and mbrane translocation, or following stress-induced damage .
Abbreviation	Recombinant Human HSPA6 protein, partial
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.	P17066
Alias	Heat shock 70 kDa protein B'
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MQAPRELAVGIDLGTTYSCVGVFQQGRVEILANDQGNRTTPSYVAFTDTERLV GDAAKSQAALNPHNTVFDAKRLIGRKFADTTVQSDMKHWPFRVVSEGGKPKV RVCYRGEDKTFYPEEISSMVLSKMKETAEAYLGQPVKHAVITVPAYFNDSQRQ ATKDAGAIAGLNVLRIINEPTAAAIAYGLDRRGAGERNVLIFDLGGGTFDVSVLSI DAGVFEVKATAGDTHLGGEDFDNRLVNHFMEEFRRKHGKDLSGNKRALRRL RTACERAKRTLSSSTQATLEIDSLFEGVDFYTSITRARFEELCSDLFRSTLEPVE KALRDAKLDKAQIHDVVLVGGSTRIPKVQKLLQDFFNGKELNKSINPDEAVAYG AAVQAAVLMGDKCEKVQDLLLLDVAPLSLGLETAGGVMTTLIQRNATIPTKQTQ TFTTYSDNQPGVFIQVYEGERAMTKDNNLLGRFELSGIPPAPRGVPQIEVTFDI DANGILSVTATDRSTGKANKITITNDKGRLSKEEVERMVHEAEQYKAEDEAQR DRVAAKNSLEAHVFHVKGSLQEESLRDKIPEEDRRKMQDKCREVLAWLEHNQ LAEKEEYEHQKRELEQICRPIFSRLYGGPGVPGGSSCGTQARQGDPSTGP
Research Area	Cancer
Source	E.coli
Target Names	HSPA6
Expression Region	1-637aa
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	74.3kDa
Protein Length	Partial

Image



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

Description

The Recombinant Human Heat shock 70 kDa protein 6 (HSPA6) is expressed in E. coli and features a partial sequence from the 1-637 amino acid region. This protein comes with an N-terminal 6xHis-tag, which makes purification and detection more straightforward in research applications. It reaches a purity greater than 90%, as verified by SDS-PAGE, which appears to ensure high-quality results for experimental use. This product is intended for research purposes only.

HSPA6 belongs to the heat shock protein 70 family, which may play a crucial role in cellular stress response mechanisms. It acts as a molecular chaperone, helping with the proper folding of nascent and stress-accumulated proteins while preventing protein aggregation. The study of HSPA6 seems important for understanding cellular homeostasis and stress response pathways. This makes it a potentially valuable tool in research focused on protein folding and stress conditions.

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. Heat Shock Response Mechanism Studies

This recombinant HSPA6 protein can be used to investigate the molecular mechanisms of cellular heat shock responses in vitro. Researchers might study protein-protein interactions between HSPA6 and other heat shock proteins or co-chaperones through biochemical assays. The N-terminal 6xHis tag makes purification and immobilization easier for interaction studies. This application could help clarify the specific role of HSPA6 in cellular stress responses compared to other HSP70 family members.

2. Antibody Development and Validation

The purified recombinant HSPA6 protein appears to work well as an antigen for generating specific antibodies against human HSPA6. The high purity (>90%) likely reduces cross-reactivity during immunization protocols. Researchers can use this protein to validate antibody specificity through ELISA, Western blot, and other immunoassays. The His-tag allows for easy immobilization on nickel-coated surfaces for antibody screening and characterization.

3. Protein Folding and Chaperone Activity Assays

This recombinant HSPA6 can be used in in vitro protein folding assays to study its potential chaperone functions. Researchers might investigate whether HSPA6 assists in refolding of denatured substrate proteins under controlled laboratory conditions. The purified protein allows for systematic studies of cofactor requirements and optimal conditions for any chaperone activity. Such studies would contribute to understanding the biochemical properties of this specific HSP70 family member.

4. Structural and Biophysical Characterization

The recombinant HSPA6 protein provides material for detailed structural studies using techniques such as X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy. Researchers can analyze the protein's conformational states and domain organization. The high purity level makes it suitable for biophysical analyses including thermal stability studies, circular dichroism spectroscopy, and dynamic light scattering experiments. These studies would likely provide insights into the structural basis of HSPA6 function.

5. Pull-down Assays for Interaction Partner Identification

The N-terminal His-tag enables efficient pull-down experiments to identify cellular proteins that interact with HSPA6. Researchers can immobilize the recombinant protein on nickel-affinity matrices and incubate with cell lysates or purified protein libraries. This approach allows for systematic identification of potential binding partners and regulatory proteins. The high purity of the recombinant protein appears to minimize background interactions and improve the reliability of interaction studies.

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.
Shelf Life	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.