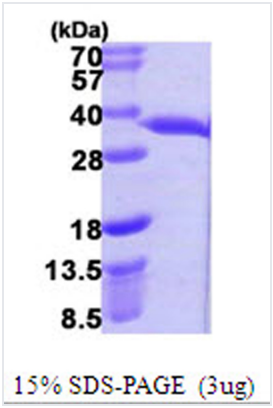
hchA Recombinant Protein

PRODUCT OVERVIEW

Product Name	hchA, Recombinant Protein
Full Product Name	hchA, 1-283aa, E Coli, His tag, E Coli
Product Gene Name	hchA recombinant protein
Product Synonym Names	Hsp31 molecular chaperone; ECK1963; JW1950; yedu; yzzC
Sequence	MGSSHHHHHH SSGLVPRGSH MTVQTSKNPQ VDIAEDNAFF PSEYSLSQYT SPVSDLDGVD YPKPYRGKHK ILVIAADERY LPTDNGKLFS TGNHPIETLL PLYHLHAAGF EFEVATISGL MTKFEYWAMP HKDEKVMPFF EQHKSLFRNP KKLADVVASL NADSEYAAIF VPGGHGALIG LPESQDVAAA LQWAIKNDRF VISLCHGPAA FLALRHGDNP LNGYSICAFP DAADKQTPEI GYMPGHLTWY FGEELKKMGM NIINDDITGR VHKDRKLLTG DSPFAANALG KLAAQEMLAA YAG
Host	E Coli
Form/Format	Liquid. 20mM Tris-HCl Buffer (pH 8.0) containing 20% glycerol, 0.1M NaCl, 1mM DTT
Purity/Purification	> 95% by SDS-PAGE
Concentration	1.0 mg/ml (determined by Bradford assay) (lot specific)
Preparation and Storage	Can be stored at 4 degree C short term (1-2 weeks). For long term storage, aliquot and store at -20 degree C or -70 degree C. Avoid repeated freezing and thawing cycles.
Molecular Weight	33.3 kDa (303aa) confirmed by MALDI-TOF
3D Structure	ModBase 3D Structure for P31658
Antigen Species	E Coli
Tag Information	His-tag
Product Categories/Family for hchA recombinant protein	Heat Shock Proteins
Applications Tested/Suitable for hchA recombinant protein	SDS-PAGE
Related Product Information for hchA recombinant protein	HchA, also known as, Escherichia coli Hsp31, is a homodimeric member of the ThiI/DJ-1/PfpI superfamily that combines molecular chaperone and aminopeptidase activities. It uses temperature-induced exposure of structured hydrophobic domains to capture and stabilize early unfolding protein intermediates under severe thermal stress. Recombinant E. coli hchA protein, fused to His-tag at N-terminus, was expressed in E Coli and purified by using conventional chromatography techniques.
Product References and Citations for hchA recombinant protein	Malki A. et al. (2003) Biochem. Biophys. Res. Commun. 301:430-436.
Other Notes	Small volumes of hchA recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for hchA purchase	MBS204082 is a recombinant protein targeting hchA. Also known as hchA, 1-283aa, E Coli, His tag, E Coli. Host: E Coli.



SDS-Page of hchA recombinant protein

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for hchA. It may not necessarily be applicable to this product.

NCBI GI #	16129913
NCBI GeneID	946481
NCBI Accession #	NP_416476
UniProt Primary Accession #	P31658
UniProt Secondary Accession #	P76338
GenBank Nucleotide #	NC_000913.3
NCBI Official Full Name	glyoxalase III and Hsp31 molecular chaperone
NCBI Official Symbol	hchA
NCBI Official Synonym Symbols	ECK1963; gloC; JW1950; yedU; yzzC
UniProt Protein Name	Protein/nucleic acid deglycase 1
UniProt Synonym Protein Names	Glyoxalase III
Protein Family	Protein deglycase
UniProt Gene Name	hchA
UniProt Synonym Gene Names	yedU; yzzC
NCBI Protein Information	glyoxalase III and Hsp31 molecular chaperone
NCBI Summary for hchA	Important for the processing of 8-12mer peptides in vivo. [More information is available at EcoGene: EG11755]. Hsp31 (YedU) is a chaperone that is active as a homodimer . [More information is available at EcoCyc: G7055].

UniProt Comments for hchA	Protein and nucleotide deglycase that catalyzes the deglycation of the Maillard adducts formed between amino groups of proteins or nucleotides and reactive carbonyl groups of glyoxals (PubMed:26102038, PubMed:26774339, PubMed:28596309). Thus, functions as a protein deglycase that repairs methylglyoxal- and glyoxal-glycated proteins, and releases repaired proteins and lactate or glycolate, respectively. Deglycates cysteine, arginine and lysine residues in proteins, and thus reactivates these proteins by reversing glycation by glyoxals. Is able to repair glycated serum albumin, aspartate aminotransferase, glyceraldehyde-3-phosphate dehydrogenase, and fructose biphosphate aldolase. Acts on early glycation intermediates (hemithioacetals and aminocarbinols), preventing the formation of Schiff bases and advanced glycation endproducts (AGE) that cause irreversible damage (PubMed:26102038, PubMed:26774339). Also functions as a nucleotide deglycase able to repair glycated guanine in the free nucleotide pool (GTP, GDP, GMP, dGTP) and in DNA and RNA. Is thus involved in a major nucleotide repair system named guanine glycation repair (GG repair), dedicated to reversing methylglyoxal and glyoxal damage via nucleotide sanitization and direct nucleic acid repair (PubMed:28596309). Has been reported to display chaperone, peptidase and glutathione-independent glyoxalase activities (PubMed:12235139, PubMed:12565879, PubMed:14731284, PubMed:15550391, PubMed:7848303, PubMed:21696459). However, these apparently disparate activities are all recruited to execute its protein deglycase primary function (PubMed:26102038, PubMed:26774339). Plays an important role in protecting cells from carbonyl stress, severe heat shock and starvation, as well as in acid resistance of stationary-phase cells (PubMed:12235139, PubMed:16796689, PubMed:17158627).
Research Articles on hchA	**1.** The authors found that Hsp31 displays glyoxalase activity that catalyses the conversion of methylglyoxal (MG) to d-lactate without an additional cofactor.
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