Periplasmic serine endoprotease DegP Recombinant Protein | degP recombinant protein

Recombinant Escherichia coli Periplasmic serine endoprotease DegP

CATALOG #	HOST
AAA115692	**E Coli or Yeast or Baculovirus or Mammalian Cell**

PRODUCT SYNONYMS

Periplasmic serine endoprotease DegP; Recombinant Escherichia coli Periplasmic serine endoprotease DegP; Heat shock protein DegP; Protease Do; degP recombinant protein

PRODUCT SPECIFICATIONS

Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE.
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Sequence Positions	27-474aa; Full Length of Mature Protein
Sequence	AETSSATTAQ QMPSLAPMLE KVMPSVVSIN VEGSTTVNTP RMPRNFQQFF GDDSPFCQEG SPFQSSPFCQ GGQGGNGGGQ QQKFMALGSG VIIDADKGYV VTNNHVVDNA TVIKVQLSDG RKFDAKMVGK DPRSDIALIQ IQNPKNLTAI KMADSDALRV GDYTVAIGNP FGLGETVTSG IVSALGRSGL NAENYENFIQ TDAAINRGNS GGALVNLNGE LIGINTAILA PDGGNIGIGF AIPSNMVKNL TSQMVEYGQV KRGELGIMGT ELNSELAKAM KVDAQRGAFV SQVLPNSSAA KAGIKAGDVI TSLNGKPISS FAALRAQVGT MPVGSKLTLG LLRDGKQVNV NLELQQSSQN QVDSSSIFNG IEGAEMSNKG KDQGVVVNNV KTGTPAAQIG LKKGDVIIGA NQQAVKNIAE LRKVLDSKPS VLALNIQRGD STIYLLMQ
Preparation and Storage	Store at -20 degree C, for extended storage, conserve at -20 degree C or -80 degree C.

IMAGES

SDS-PAGE

ADDITIONAL INFORMATION

Related Product Information for degP recombinant protein	DegP acts as a chaperone at low temperatures but switches to a peptidase (heat shock protein) at higher temperatures. It degrades transiently denatured and unfolded proteins which accumulate in the periplasm following heat shock or other stress conditions. DegP is efficient with Val-Xaa and Ile-Xaa peptide bonds, suggesting a preference for beta-branched side chain amino acids. Only unfolded proteins devoid of disulfide bonds appear capable of being cleaved, thereby preventing non-specific proteolysis of folded proteins. Its proteolytic activity is essential for the survival of cells at elevated temperatures. It can degrade IciA, ada, casein, globin and PapA. DegP shares specificity with DegQ. DegP is also involved in the biogenesis of partially folded outer-membrane proteins (OMP).

References	Sequence analysis and regulation of the htrA gene of Escherichia coli a sigma 32-independent mechanism of heat-inducible transcription.Lipinska B., Sharma S., Georgopoulos C.Nucleic Acids Res. 16:10053-10067(1988) Systematic sequencing of the Escherichia coli genome analysis of the 2.4-4.1 min (110,917-193,643 bp) region.Fujita N., Mori H., Yura T., Ishihama A.Nucleic Acids Res. 22:1637-1639(1994) Sequence of minutes 4-25 of Escherichia coli.Chung E., Allen E., Araujo R., Aparicio A.M., Davis K., Duncan M., Federspiel N., Hyman R., Kalman S., Komp C., Kurdi O., Lew H., Lin D., Namath A., Oefner P., Roberts D., Schramm S., Davis R.W. The complete genome sequence of Escherichia coli K-12.Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V., Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J., Mau B., Shao Y.Science 277:1453-1462(1997) Highly accurate genome sequences of Escherichia coli K-12 strains MG1655 and W3110.Hayashi K., Morooka N., Yamamoto Y., Fujita K., Isono K., Choi S., Ohtsubo E., Baba T., Wanner B.L., Mori H., Horiuchi T.Mol. Syst. Biol. 2:E1-E5(2006) Primary structure of the deoxyguanosine triphosphate triphosphohydrolase-encoding gene (dgt) of Escherichia coli.Quirk S., Bhatnagar S.K., Bessman M.J.Gene 89:13-18(1990) Structure and regulation of the gene for dGTP triphosphohydrolase from Escherichia coli.Wurgler S.M., Richardson C.C.Proc. Natl. Acad. Sci. U.S.A. 87:2740-2744(1990) The HtrA (DegP) protein, essential for Escherichia coli survival at high temperatures, is an endopeptidase.Lipinska B., Zylicz M., Georgopoulos C.J. Bacteriol. 172:1791-1797(1990) Protein identification with N and C-terminal sequence tags in proteome projects.Wilkins M.R., Gasteiger E., Tonella L., Ou K., Tyler M., Sanchez J.-C., Gooley A.A., Walsh B.J., Bairoch A., Appel R.D., Williams K.L., Hochstrasser D.F.J. Mol. Biol. 278:599-608(1998) Protease Do is essential for survival of Escherichia coli at high temperatures its identity with the htrA gene product.Seol J.H., Woo S.K., Jung E.M., Yoo S.J., Lee C.S., Kim K.J., Tanaka K., Ichihara A., Ha D.B., Chung C.H.Biochem. Biophys. Res. Commun. 176:730-736(1991) Site-directed mutagenesis of the HtrA (DegP) serine protease, whose proteolytic activity is indispensable for Escherichia coli survival at elevated temperatures (above 42 degrees Celsius) .Skorko-Glonek J., Wawrzynow A., Krzewski K., Kurpierz K., Lipinska B.Gene 163:47-52(1995) The Cpx two-component signal transduction pathway of Escherichia coli regulates transcription of the gene specifying the stress-inducible periplasmic protease, DegP.Danese P.N., Snyder W.B., Cosma C.L., Davis L.J., Silhavy T.J.Genes Dev. 9:387-398(1995) Comparison of the structure of wild-type HtrA heat shock protease and mutant HtrA proteins. A Fourier transform infrared spectroscopic study.Skorko-Glonek J., Krzewski K., Lipinska B., Bertoli E., Tanfani F.J. Biol. Chem. 270:11140-11146(1995) The DegP and DegQ periplasmic endoproteases of Escherichia coli specificity for cleavage sites and substrate conformation.Kolmar H., Waller P.R., Sauer R.T.J. Bacteriol. 178:5925-5929(1996) HtrA heat shock protease interacts with phospholipid membranes and undergoes conformational changes.Skorko-Glonek J., Lipinska B., Krzewski K., Zolese G., Bertoli E., Tanfani F.J. Biol. Chem. 272:8974-8982(1997) A temperature-dependent switch from chaperone to protease in a widely conserved heat shock protein.Spiess C., Beil A., Ehrmann M.Cell 97:339-347(1999) Escherichia coli DegP protease cleaves between paired hydrophobic residues in a natural substrate the PapA pilin.Jones C.H., Dexter P., Evans A.K., Liu C., Hultgren S.J., Hruby D.E.J. Bacteriol. 184:5762-5771(2002) The N-terminal region of HtrA heat shock protease from Escherichia coli is essential for stabilization of HtrA primary structure and maintaining of its oligomeric structure.Skorko-Glonek J., Zurawa D., Tanfani F., Scire A., Wawrzynow A., Narkiewicz J., Bertoli E., Lipinska B.Biochim. Biophys. Acta 1649:171-182(2003) Interplay of PDZ and protease domain of DegP ensures efficient elimination of misfolded proteins.Krojer T., Pangerl K., Kurt J., Sawa J., Stingl C., Mechtler K., Huber R., Ehrmann M., Clausen T.Proc. Natl. Acad. Sci. U.S.A. 105:7702-7707(2008) Activation of DegP chaperone-protease via formation of large cage-like oligomers upon binding to substrate proteins.Jiang J., Zhang X., Chen Y., Wu Y., Zhou Z.H., Chang Z., Sui S.F.Proc. Natl. Acad. Sci. U.S.A. 105:11939-11944(2008) The role of the L2 loop in the regulation and maintaining the proteolytic activity of HtrA (DegP) protein from Escherichia coli.Sobiecka-Szkatula A., Gieldon A., Scire A., Tanfani F., Figaj D., Koper T., Ciarkowski J., Lipinska B., Skorko-Glonek J.Arch. Biochem. Biophys. 500:123-130(2010) Factors defining the functional oligomeric state of Escherichia coli DegP protease.Iwanczyk J., Leong V., Ortega J.PLoS ONE 6:E18944-E18944(2011) Crystal structure of DegP (HtrA) reveals a new protease-chaperone machine.Krojer T., Garrido-Franco M., Huber R., Ehrmann M., Clausen T.Nature 416:455-459(2002) Roles of DegP in prevention of protein misfolding in the periplasm upon overexpression of penicillin acylase in Escherichia coli.Pan K.L., Hsiao H.C., Weng C.L., Wu M.S., Chou C.P.J. Bacteriol. 185:3020-3030(2003) Structural basis for the regulated protease and chaperone function of DegP.Krojer T., Sawa J., Schafer E., Saibil H.R., Ehrmann M., Clausen T.Nature 453:885-890(2008) HtrA proteases have a conserved activation mechanism that can be triggered by distinct molecular cues.Krojer T., Sawa J., Huber R., Clausen T.Nat. Struct. Mol. Biol. 17:844-852(2010) Covalent linkage of distinct substrate degrons controls assembly and disassembly of DegP proteolytic cages.Kim S., Grant R.A., Sauer R.T.Cell 145:67-78(2011)

NCBI AND UNIPROT INFORMATION

NCBI GI #	16128154
NCBI GeneID	947139
NCBI Accession #	NP_414703.1

NCBI GenBank Nucleotide #	NC_000913.3
UniProt Accession #	P0C0V0; P09376; P15724
Molecular Weight	48.8 kDa
NCBI Official Full Name	serine endoprotease (protease Do), membrane-associated
NCBI Official Symbol	degP
NCBI Official Synonym Symbols	ECK0160; htrA; JW0157; ptd
NCBI Protein Information	serine endoprotease (protease Do), membrane-associated
UniProt Protein Name	Periplasmic serine endoprotease DegP
UniProt Gene Name	**degP**
UniProt Synonym Gene Names	htrA; ptd
UniProt Entry Name	DEGP_ECOLI

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