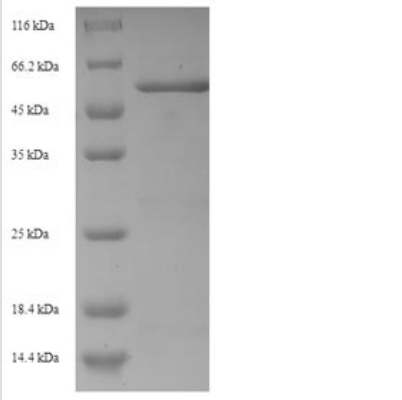
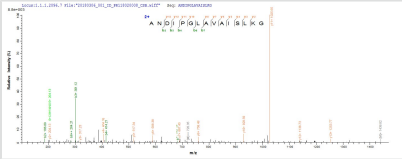
Recombinant Pseudomonas aeruginosa Beta-lactamase (ampC)

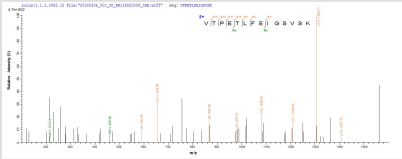
Product Code	CSB-EP326492EZX
Abbreviation	Recombinant Pseudomonas aeruginosa ampC protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P24735
Alias	Cephalosporinase
Product Type	Recombinant Protein
Immunogen Species	Pseudomonas aeruginosa (strain ATCC 15692 / PAO1 / 1C / PRS 101 / LMG 12228)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	GEAPADRLKALVDAAVQPVMKANDIPGLAVAISLKGEPHYFSYGLASKEDGRR VTPETLFEIGSVSKTFTATLAGYALTQDKMRLDDRASQHWPALQGSRFDGISL LDLATYTAGGLPLQFPDSVQKDQAQIRDYYRQWQPTYAPGSQRLYSNPSIGLF GYLAARSLGQPFERLMEQQVFPALGLEQTHLDVPEAALAQYAQGYGKDDRPL RVGPGPLDAEGYGVKTSAADLLRFVDANLHPERLDRPWAQALDATHRGYYKV GDMTQGLGWEAYDWPISLKRLQAGNSTPMALQPHRIARLPAPQALEGQRLLN KTGSTNGFGAYVAFVPGRDLGLVILANRNYPNAERVKIAYAILSGLEQQGKVPL KR
Research Area	Others
Source	E.coli
Target Names	ampC
Protein Names	Recommended name: Beta-lactamase EC= 3.5.2.6 Alternative name(s): Cephalosporinase
Expression Region	27-397aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	56.7kDa
Protein Length	Full Length of Mature Protein
Image	



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



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP326492EZX could indicate that this peptide derived from E.coli-expressed Pseudomonas aeruginosa (strain ATCC 15692 / DSM 22644 / CIP 104116 / JCM 14847 / LMG 12228 / 1C / PRS 101 / PAO1) ampC.



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP326492EZX could indicate that this peptide derived from E.coli-expressed Pseudomonas aeruginosa (strain ATCC 15692 / DSM 22644 / CIP 104116 / JCM 14847 / LMG 12228 / 1C / PRS 101 / PAO1) ampC.

Description

The protein AmpC is a β-lactamase enzyme that confers resistance to β-lactam antibiotics in various bacteria, including Klebsiella pneumoniae, Escherichia coli, and Pseudomonas aeruginosa [1]. AmpC is regulated by several proteins, including AmpR, a transcriptional regulator, and AmpG, a transmembrane permease that functions as a specific permease for 1,6-anhydromurapeptides, which are thought to be the signal molecules involved in ampC induction [2][3][4][5]. Additionally, AmpC has been suggested to function as a putative D,D-endopeptidase, and its overproduction is associated with β-lactam resistance [6]. The regulation of AmpC production requires three proteins: AmpG, AmpD, a cytosolic peptidoglycan-recycling amidase, and AmpR [7]. Furthermore, AmpC has a weak polybasic property and carries numerous positive charges due to the protonation of the amino groups in its backbone [8]. Penicillin-binding proteins (PBPs) also play a role in ampC regulation [9]. AmpR is a positive transcriptional regulator belonging to the LysR family of regulatory proteins [10]. The structural gene for AmpC, ampC, is located close to other genes on the chromosome, such as frdA, the structural gene for the larger subunit of fumarate reductase [11].

References:

[1] Y. Li, G. Li, L. Duo, W. Wang, C. Wang, H. Zhanget al., "Dha-1 plasmid-mediated ampc β-lactamase expression and regulation of klebsiella pnuemoniae isolates", Molecular Medicine Reports, vol. 11, no. 4, p. 3069-3077, 2014.

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[8] H. Yao, R. Xiao, T. Yin, K. Shi, H. Yao, & H. Liu, "Switchable bioelectrocatalysis of glucose oxidase immobilized into multilayers with lamellar nanoparticles of amino-functionalized magnesium phyllosilicate clay", Journal of the Electrochemical Society, vol. 168, no. 4, p. 046509, 2021. https://doi.org/10.1149/1945-7111/abf442
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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.