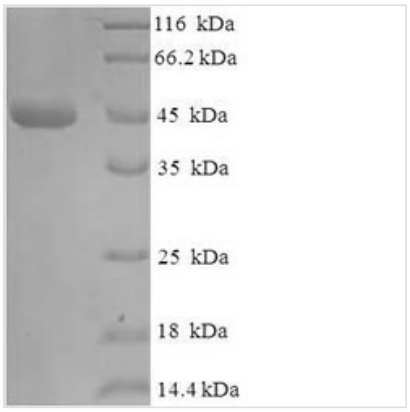
Recombinant Escherichia coli Beta-lactamase TEM (bla)

Product Code	CSB-EP352353ENL
Relevance	T-type are the most prevalent beta-lactamases in enterobacteria; they hydrolyze the beta-lactam bond in susceptible beta-lactam antibiotics, thus conferring resistance to penicillins and cephalosporins. T-3 and T-4 are capable of hydrolyzing cefotaxime and ceftazidime. T-5 is capable of hydrolyzing ceftazidime. T-6 is capable of hydrolyzing ceftazidime and aztreonam. T-8/CAZ-2, T-16/CAZ-7 and T-24/CAZ-6 are markedly active against ceftazidime. IRT-4 shows resistance to beta-lactamase inhibitors.
Abbreviation	Recombinant E.coli bla 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.	P62593
Alias	IRT-4PenicillinaseTEM-1TEM-16/CAZ-7TEM-2TEM-24/CAZ-6TEM-3TEM-4TEM-5TEM-6TEM-8/CAZ-2
Product Type	Recombinant Protein
Immunogen Species	Escherichia coli
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	HPETLVKVKDAEDQLGARVGYIELDLNSGKILESFRPEERFPMMSTFKVLLCGAVLSRVDAGQEQLGRRIHYSQNDLVEYSPVTEKHLTDGMTVRELCSAAITMSDNTAANLLLTTIGGPKELTAFLHNMGDHVTRLDRWEPELNEAIPNDERDTTMPAAMATTLRKLLTGELLTLASRQQLIDWMEADKVAGPLLRSALPAGWFIADKSGAGERGSRGIIAALGPDGKPSRIVVIYTTGSQATMDERNRQIAEIGASLIKHW
Research Area	Others
Source	E.coli
Target Names	bla;
Protein Names	IRT-4PenicillinaseTEM-1TEM-16/CAZ-7TEM-2TEM-24/CAZ-6TEM-3TEM-4TEM-5TEM-6TEM-8/CAZ-2
Expression Region	24-286aa
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	44.9 kDa
Protein Length	Full Length of Mature Protein

Image



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

Description

The DNA coding sequence translated into the Escherichia coli bla protein sequence (24-286aa) was fused with the N-terminal 6xHis-SUMO tag sequence to form the recombinant DNA, which was inserted into an expression vector. The reconstructed expression vector was transformed into the E.coli for follow-up expression. The product underwent purification to obtain the recombinant Escherichia coli bla protein with N-terminal 6xHis-SUMO tag. The SDS-PAGE analysis determined its purity higher than 90%. After electrophoresis, a 45 kDa protein band was observed on the gel.

bla is a gene encoding a protein called Beta-lactamase TEM (also known as Penicillinase) in E.coli and belongs to class-A beta-lactamase family. This protein is the most commonly encountered beta-lactamase in Gram-negative bacteria. The production of penicillinase is the main cause of ampicillin resistance in E. coli. Furthermore, this protein is also responsible for the ampicillin and penicillin resistance that is seen in H. influenzae and N. gonorrhoeae in increasing numbers. Although TEM-type beta-lactamases are most often found in E. coli and K. pneumoniae, they are also found in other species of Gram-negative bacteria with increasing frequency.

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

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