*blue*TEV

Cysteine protease from Tobacco Etch Virus

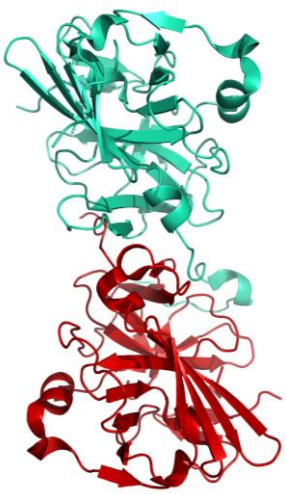
Cat. no. P2020-138

Product Information

Protein:	*blue*TEV (~ 53.7 kDa)
Uniprot#:	Q0GDU8
Sequence:	KGPRDYNPISSSICHLTNESDGHTTSLYGIGFGPFIITNKHLFRRNNGTLVVQSLHGVFK VKDTTTLQQHLVDGRDMIIIRMPKDFPPFPQKLKFREPQREERICLVTTNFQTKSMSSMV SDTSCTFPSGDGIFWKHWIQTKDGQCGSPLVSTRDGFIVGIHSASNFTNTNNYFTSVPKN FMELLTNQEAQQWVSGWRLNADSVLWGGHKVFMVKPEEPFQPVKEATQLMNE Methionine at pos. 1 might be present due to cloning constraints, C-terminal His-tag and BFP-fusion not shown in sequence.
Source:	Recombinantly expressed in *E.coli*.
Tag(s):	BFP, N-terminal and His-Tag, C-terminal
Purification:	Purified by affinity chromatography and subsequent buffer exchange.
Formulation:	50 mM Tris, 150 mM NaCl, 0.5 mM EDTA, 40% Glycerol; pH 8.0 Liquid, stored and shipped at -20 °C.
Purity:	> 85 % (will be determined by densitometry of Coomassie stained gel, example next page)
Specific Activity:	≥ 20 Units/µl (determined by cleavage of control protein) ≥ 0.25 µmol/min/mg (determined by cleavage of labeled peptide (Fluorometric assay), TEV Protease Activity Kit (Abcam))
Unit definition:	One unit of *blue*TEV cleaves > 85 % of 3 µg of a fusion protein in 1 hour at room temperature. Cleavage overnight increases cleavage efficiency to > 99 %. It is recommended to optimize cleavage conditions for each protein by varying the amount of *blue*TEV, reaction time, or temperature.
Concentration:	Will be determined by BCA-Assay.
Long-term storage:	Recommended at -20 °C.

Background Information:

*blue*TEV represents the catalytic domain of the nuclear inclusion a (NIa) protein with a molecular weight of 27 kDa encoded by the plant virus Tobacco Etch Virus. "*blue*" indicates fusion of the protease to blue fluorescent protein (BFP), which leads to increased stability and solubility of TEV protease. Moreover, *blue*TEV has been optimized by site directed mutagenesis to prevent autocatalytic cleavage. *blue*TEV is a highly site-specific cysteine protease that recognizes the amino acid sequence Glu-Asn-Leu-Tyr-Phe-Gln-(Gly/Ser) [ENLYFQ(G/S)] and cleaves between the residues Gln and Gly/Ser. The most commonly used recognition sequence is ENLYFQG. In biotechnology, *blue*TEV is a versatile enzyme to remove affinity tags from recombinant proteins with high specificity and activity over a wide

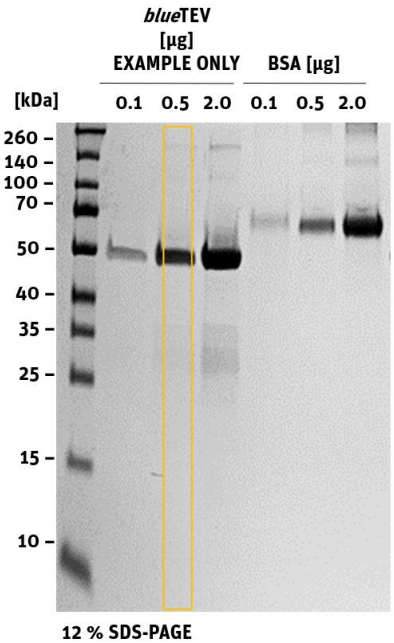


Structural model of blueTEV

Product Information

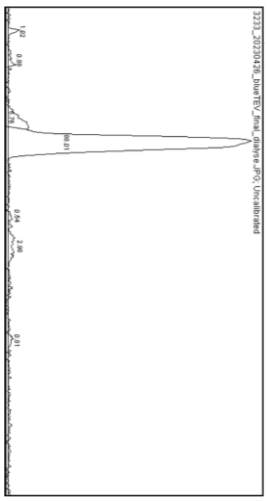
range of pH, ionic strength and temperatures between 4 °C and 30 °C. The optimal temperature for cleavage is 30 °C. It is recommended to improve cleavage efficiency for each fusion protein by varying the amount of recombinant *blue*TEV, reaction time, or incubation temperature. The great advantage of *blue*TEV is its facile removal after cleavage reaction by immobilized metal affinity chromatography (IMAC) since it is equipped with a His-tag. Furthermore, the removal of *blue*TEV can be monitored instantly by detection of fluorescence in solution - this easy, fast and sensitive method omits time-consuming SDS-PAGE or Western blot analysis.
If the blue fluorescence of *blue*TEV is not suitable and you prefer green fluorescence as readout, check our *green*TEV protease.

Quality Information (provided for each lot):



12 % SDS-PAGE

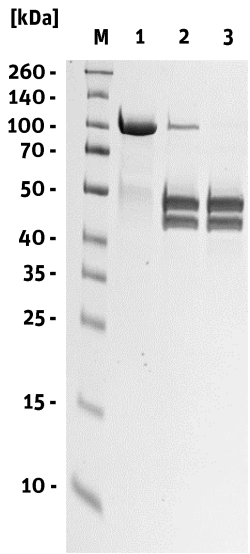
SDS-PAGE/Coll.Coomassie



	Area	Percent
1	90.485	1.017
2	78.607	0.884
3	512.335	5.761
4	7827.234	88.007
5	48.071	0.540
6	264.991	2.979
7	72.192	0.812

Histogram (of marked lane in gel picture)

Test Cleavage:



P2020-131 Cleavage and tag control protein (90.5 kDa):
1 : Start of cleavage reaction
2 : Cleavage reaction (1 h)
3 : End of cleavage reaction (24 h)

12 % SDS-PAGE & coll. Coomassie staining.