TEV Protease

Product description

TEV protease is a highly specific cysteine protease with the highest catalytic efficiency. Its identification sequence is ENLYFQ ▾S, but the amino acid at the P1' position can also be G, A, M, C, or H(1). TEV proteases are typically used to remove affinity purification tags from fusion proteins, such as Glutathione S-transferase (GST), His or other tags for removing fusion proteins. TEV proteases have His tags, which can be easily removed from reactions using nickel affinity resins, so they are suitable for digestion reactions of fusion proteins with His tags, while recombinant proteins with His tags that are not fully digested, excised His tags, and TEV Protease (His-tag) can be removed by means of nickel column binding, resulting in a flow-through solution (Flow-through) with the desired target protein. During practical operation, in order to preserve the structure and biological activity of the protein of interest as much as possible, it is recommended to cut overnight with TEV Protease enzyme at 4 °C. TEV Protease is active in the pH range of 6.0-9.0, and when the pH is less than or equal to 5, it reduces or even loses enzyme activity.

Composition and storage conditions

Components \ Size	1000 U	5000 U	10000 U
TEV Protease	0.1 ml	0.5 ml	1 ml
10X TEV Protease Reaction Buffer	1 ml	1 ml x5	1 ml x10
Store the components at -20 °C.			

Experimental operation

1. For specific proteins, the optimal incubation time and enzyme concentration must be determined empirically. Reactions can be scaled up linearly to accommodate larger sample sizes and reaction volumes. Typical reaction conditions are as follows (operating on ice):

Reagent	Volume	Final Concentration
TEV-fusion protein	X µl	15 µg
10X Reaction buffer	5 µl	1 X
TEV Protease	1 µl	10 U
Nuclease-free Water	to 50 µl	-

2. Mix the reaction gently up and down with a pipette and centrifuge quickly.
3. Incubate at 30 °C for 1 h or 4 °C overnight.
4. Take 10 µl of the sample for SDS-PAGE electrophoresis to determine whether the digestion is complete,

and if it is not, the reaction time can be extended appropriately.

Product description

1. Enzyme Activation Unit (U) Definition: Reaction at 30 °C for 1 h, 1 U of TEV protease cleaves 2 μg of TEV-fusion protein to 95%.
2. 2. Stored solution composition：50 mM Tris-HCl，250 mM NaCl，1 mM TCEP，1 mM EDTA，50% Glycerol，pH 7.5 @ 25 °C。
3. 10x reaction solution composition: 500 mM Tris-HCl, 5 mM EDTA, 10 mM DTT, (pH 7.5 @ 25 °C).
4. Quality assurance
   - Purity: SDS-PAGE ≥ 95%.
   - Non-specific protease: 10 U of TEV protease and 48 ug of protein standard mixture incubated for 20 h at 37 °C to detect no protein degradation by SDS-PAGE.
5. Inactivation conditions: 65 °C, 20 min.
6. This product is for scientific use only.