AcTEV™ Protease

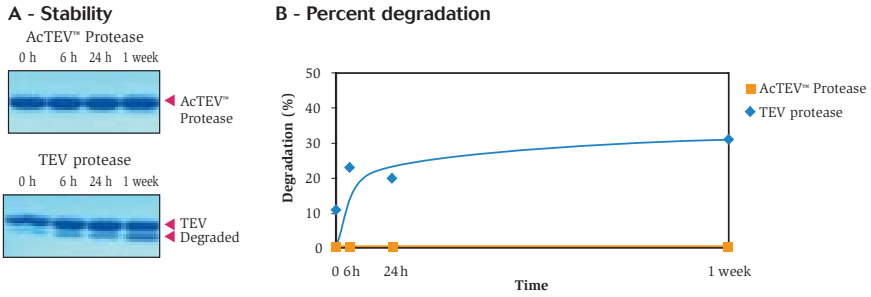
Description:

AcTEV™ Protease is an improved version of Tobacco Etch Virus (TEV) protease that is highly site-specific, highly active, and significantly more stable than native TEV protease, resulting in enhanced long-term activity. AcTEV™ Protease specifically recognizes a seven amino acid sequence (Glu-Asn-Leu-Tyr-Phe-Gln-Gly, cleaving between Gln and Gly), making it useful for removing affinity tags from fusion proteins (1,2). Incubation with AcTEV™ Protease releases the protein of interest from the fusion tag. This is an effective way to remove solubility, secretion, detection, and purification tags from recombinant proteins.

AcTEV™ Protease features:

- Highly specific cleavage activity
- Enhanced enzyme stability for prolonged protease activity (Figure 1)
- Activity over a broad temperature (+4˚C to 30˚C) and pH (6.0 to 8.5) range
- Six-histidine sequence to facilitate its removal from the digested protein sample
- Greater than 85% single-band purity with no non-specific protease contamination

Figure 1 - AcTEV™ and TEV protease stability at + 4˚C



AcTEV™ and TEV Protease were incubated at +4˚C for 0, 6 h, 24 h, and 168 h (1 week). Samples were analyzed on a 4-20% Novex® Tris-Glycine Gel (Panel A). The amount of degraded product was quantitated and plotted as a function of time (Panel B).

Enzyme specifications:

Purified from *E. coli* expressing the AcTEV™ Protease gene. Unit Definition: One unit of AcTEV™ Protease cleaves 85% of a 3 µg control substrate in 1 h at 30˚C. Unit Reaction Conditions: 50 mM Tris-HCl (pH 8.0), 0.5 mM EDTA, 1 mM DTT, 3 µg control substrate, and 1 unit enzyme in 30 µl for 1 h at 30˚C. AcTEV™ Proease is functionally tested for the absence of any non-specific protease activity.

Contents and Storage:

AcTEV™ Protease is supplied with a vial of 20X TEV buffer [1 M Tris-HCl (pH 8.0), 10 mM EDTA], and a vial of 100 mM DTT. Store at -20˚C. Guaranteed stable for 6 months when properly stored.

Product	Concentration	Quantity	Cat. no.
AcTEV™ Protease	10 units/µl	1,000 units (100 mL)	12575-015
	10 units/µl	10,000 units (1 mL)	12575-023

Reference(s):

1. Polayes, D.A. *et al.* (1994) *Focus*® **16**: 1
2. Parks, T.D. *et al.* (1994) *Anal. Biochem.* **216**: 413.

Recommended vectors containing TEV sites

Highest-level protein production in *E. coli*: Champion™ pET151/D-TOPO (Invitrogen Cat. No. K151-01)
Protein production in baculovirus: pFastBac™ HT (Invitrogen Cat. No. 10584-027)

Insert a TEV cleavage sequence into custom primers

Free, online primer design software with one-step addition of a TEV cleavage sequence:
Visit the OligoPerfect™ Designer under the Custom Primers menu at www.invitrogen.com.

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