Product Information

IceTEV Protease

TEV protease optimized for low temperatures, Recombinant, expressed in *E. coli*

SAE0195

Product Description

Synonyms: Tobacco Etch Virus protease, TEVp

TEV protease is a highly sequence-specific serine protease from Tobacco Etch Virus.[1] Due to its high specificity, TEV protease is popular for cleavage of recombinant fusion proteins. The optimal sequence for TEV protease cleavage is ENLYFQ\S. However, TEV protease is active on a range of substrates with a consensus sequence of EXLYΦQ\φ where:

- X is any residue
- Φ is any large or medium hydrophobic residue
- φ is any small hydrophobic or polar residue (such as Glycine, Serine, Alanine, Valine, Cysteine)[2]

Fusion tag removal *in vitro* is the most popular application of TEV protease. One publication has reported that standard TEV protease diminishes in activity by around 10-fold at 4 °C.[3]

IceTEV protease is specifically designed for cleavage at low temperatures (2-10 °C). After cleavage, this histidine-tagged IceTEV protease can be removed with Ni-agarose beads (such as Cat. No. P6611).

This IceTEV Protease product is supplied at a concentration of ≥ 3 U/µL in an aqueous buffer which contains 20 mM Tris-HCl (pH 7.5), 50 mM Sodium Chloride, 1 mM TCEP, 1 mM EDTA and 50% (V/V) glycerol.

Unit Definition

One unit of TEV protease cleaves > 85% of 3 µg of control substrate in one hour at pH 8.0 at 0-5 °C.

Storage/Stability

The product retains activity for at least 2 years when stored at -20 °C.

Preparation Instructions

TEV Protease is active over a wide range of pH values, ionic strengths, and temperatures. IceTEV protease is an excellent choice for temperature-sensitive proteins. However, the activity toward substrate proteins depends on the substrate identity and the reaction conditions. Since TEV protease is a cysteine protease, the use of low concentration of reducing agent, such as 0.1-2 mM DTT, in the reaction buffer is suggested, to keep the enzyme active during prolonged incubations.

A good starting point for optimization is to use 20 units of TEV Protease per mg of target protein at 2-10 °C for 12-24 hours. Depending on the results, increase or decrease the concentration of TEV protease in subsequent experiments.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

References

1. Dougherty, W.G. *et al*., *Virology*, **171(2)**, 356-364 (1989).
2. Kapust, R.B. *et al*., *Biochem. Biophys. Res. Comm*., **294(5)**, 949-955 (2002).
3. Raran-Kurussi, S. *et al*., *Anal. Biochem*., **436(2)**, 142-144 (2013).

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