



TEV Protease

Manual

Catalog #	5022	5025	5027
Package Size	2,000 units	10,000 units	100,000 units

Custom formats and package sizes are available upon request



Important!

-20°C Storage Required

- * Immediately inspect packages
- * Freeze upon receipt



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Intact Genomics, Inc.

TEV Protease

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Description:

IG® TEV Protease is a recombinant, highly specific protease used to remove affinity tags from fusion proteins. It recognizes the general sequence E-X-X-Y-X-Q-(S/G) and cleaves between the glutamine and serine or glycine residues. The most commonly used recognition sequence is ENLYFQG.

Derived from the tobacco etch virus (TEV) protease^{1,2}, IG® TEV Protease contains a histidine affinity tag, allowing it to be easily removed from the cleaved target protein by immobilized metal affinity chromatography (IMAC). Its high sequence specificity makes it suitable for affinity-tag removal during recombinant protein purification while minimizing nonspecific cleavage.

Applications:

- Removal of affinity tags from recombinant fusion proteins
- Cleavage of proteins containing TEV recognition sequences, such as ENLYFQG
- Protein purification and downstream processing
- Preparation of native or near-native proteins for structural and functional studies
- Processing of recombinant proteins for biochemical, biophysical, and interaction assays

Benefits:

- Removes affinity tags only from recombinant proteins that have the designed TEV recognition site.
- Will not cleave proteins of interest that have no TEV recognition site in its sequence. The enzyme is highly specific with very limited off-target cleavage.
- Specifically removes affinity tags from proteins containing a TEV recognition site
- High specificity with minimal off-target cleavage
- Helps preserve target protein structure and activity
- Histidine-tagged for easy removal by IMAC
- Suitable for diverse protein purification workflows
- Targeted proteolysis.
- Histidine affinity tag for easy removal after digestion using metal affinity resins.

Source:

Recombinant protein derived from tobacco etch virus protease sequence.

Specifications:

Activity: 1 unit of TEV protease will digest 2 µg of a fusion protein with a TEV site in 1 hour at 25°C. Completeness is evaluated by SDS-PAGE.

Shipping Conditions: Ship on dry ice or with ice packs.

Product Components and Storage Temperature:

The following reagents are supplied with this product:

IG Cat #	Package Size	Component Name	IG Part #	Amount	Concentration	Storage
5022	2,000 U	TEV Protease	P241290	1 × 200 µL	10 U/µL	-20 °C
		10x Protease Reaction Buffer	P241297	1 × 1.2 mL	10X	-20 °C
5025	10, 000 U	TEV Protease	P241294	1 × 1 mL	10 U/µL	-20 °C
		10x Protease Reaction Buffer	P241297	5 × 1.2 mL	10X	-20 °C
5027	100, 000 U	TEV Protease	P241294	10 × 1 mL	10 U/µL	-20 °C
		10x Protease Reaction Buffer	P241299	2 × 30 mL	10X	-20 °C

Custom formats and package sizes are available upon request.

Quality Control:

1 unit of TEV protease will digest 2 µg of a fusion protein with a TEV site in 1 hour at 25°C. Completeness is evaluated by SDS-PAGE.

General Guidelines:

Due to different protein properties, some constructs may require extended incubation periods with TEV protease (up to three days at either 4°C or 30°C) to achieve complete cleavage.

The addition of extra TEV Protease after 24 hours may also help achieve complete cleavage.

Extra TEV protease, up to 5 µL per 50 µL reaction volume, may help with some constructs.

Buffer Compatibility:

Reagent	Acceptable Range	Reagent	Acceptable range
Urea	<2 M	Zn ²⁺	<5 mM
Guanidine HCl	<0.5 M	Cu ²⁺	<1 mM
Imidazole	<50 mM	Co ²⁺	<10 mM
Glycerol	<40%	MgSO ₄	<10 mM
EDTA	<100 mM	MnCl ₂	<10 mM
NaCl	<2 M, optimal at <0.2 M NaCl	CaCl ₂	<10 mM

TEV Protease Reaction Protocol:

NOTE: Protein constructs may affect the efficiency of TEV protease. Some cleavage reactions may take longer and protease enzyme quantities and reaction volumes may also be adjusted accordingly. For unknown samples, this simple procedure is a good place to start:

1. Set up a sample reaction and a control reaction using the table below:

Reagent	μL of Sample	μL of Control Sample
Substrate protein with TEV cleavage site	X (up to 15 μg)	X (up to 15 μg)
Distilled H ₂ O	44 - X	45 - X
10x Protease Reaction Buffer	5	5
10 U/μL TEV Protease	1	0
Total Volume:	50	50

2. Incubate at 30°C for 1 hour or overnight at 4 °C.
3. Analyze cleavage by SDS-PAGE.

References:

1. Phan, J. *et al.* Structural Basis for the Substrate Specificity of Tobacco Etch Virus Protease. *Journal of Biological Chemistry* 277, 50564–50572 (2002).
2. Dougherty, W. G., Carrington, J. C., Cary, S. M. & Parks, T. D. Biochemical and mutational analysis of a plant virus polyprotein cleavage site. *EMBO J* 7, 1281–1287 (1988).

Related Products:

- IG® DsRed Fluorescence Standard Kit (Cat.# 5010)
- IG® mVenus Fluorescence Standard Kit (Cat.# 5014)
- Biotin Protein Ligase (Cat. # 5031, 5033)
- BL21(DE3) Chemically Competent Cells (Cat. # 1051-06, 1055-384)
- IG® Autoinduction DE3 Chemically Competent Cells (Cat. # 1065-06, 1065-96)

Ordering Information:

- Order online within the USA. Place orders on **www.intactgenomics.com** using our secure Shopping Cart.
- Order by email, phone, or fax.
Email: **sales@intactgenomics.com**
Phone: (314) 942-3655 | Toll-free : 855-835-7172 | Fax: (314) 942-3656
- Order via our distributors.



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Our hours are Monday - Friday, 8 AM to 5 PM, U.S. central standard time (CST).

Intact Genomics, Inc.

11840 Westline Industrial Drive, Suite 120,
St. Louis, MO. 63146, USA

Phone: (314) 942-3655 | **Toll-free :** 855-835-7172 | **Fax:** (314) 942-3656

Email: sales@intactgenomics.com | ig@intactgenomics.com

Website: www.intactgenomics.com



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