



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC Handels GmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Product Information

## TEV Protease Kit

### Kit Contents

| Component                           | 29090-1000U | 29090-10000U |
|-------------------------------------|-------------|--------------|
| 29090A: TEV Protease (10 U/uL)      | 1,000 units | 10,000 units |
| 29090B: Control Substrate (1 mg/mL) | 10 ug       | 50 ug        |
| 29090C: 10X Reaction Buffer         | 1 mL        | 1 mL         |

### Storage and Handling

Store all kit components at -20°C. Product is stable for at least 12 months from date of receipt when stored as recommended.

TEV Protease is supplied at 10 U/uL as a 0.2 um-filtered solution containing 50 mM Tris-HCl, 250 mM NaCl, 1 mM TCEP, 1 mM EDTA, 50% Glycerol, pH 7.5.

Control Substrate is supplied at 1 mg/mL as a 0.2 um-filtered solution containing 50 mM Tris-HCl, 250 mM NaCl, 1 mM TCEP, 1 mM EDTA, 50% Glycerol, pH 7.5.

10X Reaction Buffer is supplied as a 0.2 um-filtered solution containing 500 mM Tris-HCl, 5 mM EDTA, and 10 mM DTT, pH 8.0.

### Molecular Weight:

Recombinant 7X His-tag TEV Protease: 28.6 kDa, observed by reducing SDS-PAGE.

Control Substrate: 80.3 kDa (before cleavage); 43.3 kDa and 37 kDa (after TEV cleavage) observed by reducing SDS-PAGE.

**Purity (TEV Protease):** >95% pure as demonstrated by reducing SDS-PAGE.

**Activity (TEV Protease):** 10 U/uL.

**Unit Definition:** One unit of TEV Protease cleaves > 85% of 3 ug of control substrate in 1 hour at 30°C in 1X Reaction Buffer.

### Product Description

TEV protease is a highly sequence-specific cysteine protease from Tobacco Etch Virus (TEV). The TEV Protease recognition sequence with the highest catalytic efficiency is the sequence Glu-Asn-Leu-Tyr-Phe-Gln-Ser with optimal cleavage occurring between the Gln and Ser residues. However, the amino acid in the P1' position (amino acid immediately downstream of the cleavage site) can also be Gly, Ala, Met, Cys, or His. The protease is used to cleave affinity tags such as maltose-binding protein (MBP) or poly-histidine from fusion proteins. The optional temperature for cleavage is 30°C but it can also be used at temperatures as low as 4°C.

Biotium's recombinant TEV is expressed from *E. coli* as a single, non-glycosylated polypeptide chain with N-terminal 7X His-tag for easy removal from the reaction using nickel affinity chromatography.

The TEV Kit includes Control Substrate as an optional reaction control. It is a His-tagged fusion protein (MBP-TEV substrate-His6) around 80.3 kDa, observed by reducing SDS-PAGE. When Control Substrate is cleaved with TEV, two bands at 43.3 kDa and 37 kDa are observed under reducing SDS-PAGE (Figure 2).

### Recombinant 7X His-tag TEV Protease Sequence

```

10      20      30      40
GHHHHHHHGE SLFKGPRDYN PISSTICHLT NESDGHHTSL
50      60      70      80
YGIGFGPFII TNKHLFRRNN GTLLVQSLHG VFKVKNNTTL
90      100     110     120
QQHLIDGRDM IIRMPKDFP PFPQKLKFRE PQREERICLV
130     140     150     160
TTNFQTKSMS SMVSDTSCTF PSSDGIFWKH WIQTKDGQCG
170     180     190     200
SPLVSTRDGF IVGIHSASNF TNTNNYFTSV PKNFMELLTN
210     220     230     240
QEAQQWVSGW RLNADSVLWG GHKVFVMKPE EPFQPVKEAT
QLMNRRRRR

```

Figure 1. Amino acid sequence for recombinant 7X His-tag TEV Protease.

### Experimental Protocol

Optimal incubation times and enzyme concentrations may vary between substrates and should be determined empirically. As a starting point, we recommend using 1 unit of TEV protease per 1.5 ug substrate. Reactions may be scaled up linearly. Typical reaction conditions for cleaving Control Substrate in a 50 uL reaction are provided below:

Table 1. Control Reaction Setup

| Component         | Stock concentration | Volume | Final concentration (50 uL reaction) |
|-------------------|---------------------|--------|--------------------------------------|
| Water             | N/A                 | 29 uL  | N/A                                  |
| Reaction Buffer   | 10X                 | 5 uL   | 1X                                   |
| Control Substrate | 1 mg/mL             | 15 uL  | 0.3 mg/mL (15 ug total)              |
| TEV Protease      | 10 U/uL             | 1 uL   | 0.2 U/uL (10 U total)                |

- Combine the reaction components in the order shown in Table 1.
- Incubate at 30°C for 1 hour or at 4°C overnight.
- Optional: Isolate the cleaved substrate by running the sample reaction over a nickel affinity column and collect the flow through. The TEV Protease and Control Substrate with His tag will remain bound to the column. The MBP tag will be in the flow through. Alternatively, the reaction can be analyzed by SDS-PAGE without column clean-up.
- Reaction efficiency of TEV protease can be assessed by running a reducing SDS-PAGE of Control Substrate in the presence and absence of TEV protease. The cleaved Control Substrate will produce bands at 37 kDa and 43.3 kDa. Uncleaved Control Substrate will run at 80.3 kDa. If TEV is not removed by nickel column, it will be present on the gel at 28.6 kDa (Figure 2).

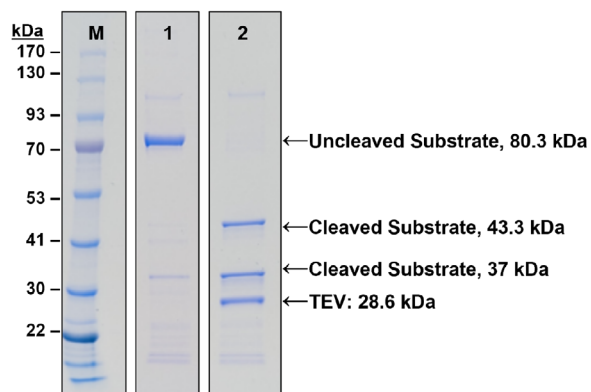


Figure 2. Reducing SDS-PAGE and One-Step Blue® staining of Control Substrate (3 ug) in the absence (Lane 1) or presence (Lane 2) of TEV Protease. Samples were incubated at 30°C for 1 hour prior to gel analysis. Minor band around 100 kDa may be detectable in uncleaved and cleaved Control Substrate samples.

## Related Products

| Cat. No.          | Product  |
|-------------------|--|
| 29088             | Annexin V (His Tag)  |
| 20228...<br>20360 | Monoclonal Mouse Anti-6X His                                   |
| 20014...<br>20835 | Donkey Anti-Mouse IgG (H+L), Highly Cross-Adsorbed (Min X Rat) |
| 20301...<br>20903 | Goat Anti-Mouse IgG (H+L), Highly Cross-Adsorbed (Min X Rat)   |
| 21003-1L          | One-Step Blue® Protein Gel Stain                               |
| 21004             | One-Step Lumitein™ Protein Gel Stain                           |
| 21005             | One-Step Lumitein™ UV Protein Gel Stain                        |
| 21530             | Peacock™ Prestained Protein Marker                             |
| 21531             | Peacock™ Plus Prestained Protein Marker                        |
| 40136             | 4X Protein Loading Buffer with Orange Tracking Dye             |
| 23013             | TrueBlack® WB Blocking Buffer Kit                              |
| 22013             | Bovine Serum Albumin Fraction V                                |
| 22012             | Dry Milk Powder  |
| 22011             | Fish Gelatin Powder  |
| 22002             | Tween® 20  |
| 41024-4L          | Water, Ultrapure Molecular Biology Grade                       |

Please visit our website at [www.biotium.com](http://www.biotium.com) for information on our life science research products, including antibody and protein labeling kits, western blotting reagents, blocking buffers, kits for protein analysis, and more products for cell biology research.

Materials from Biotium are sold for research use only, and are not intended for food, drug, household, or cosmetic use.