



Aurora Biolabs TEV Proteases & Activity Assay Kit

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Why Choose Aurora Biolabs TEV Proteases & Activity Assay Kit?

Proven Track Record in Recombinant Protein Production

Aurora Biolabs has been manufacturing crystallography-grade recombinant proteins for drug discovery and optimization since 2007. Our recombinant proteins are known for:

- Batch-to-Batch Consistency
- Stringent Quality Control Tests
- Protein Purity: >95%, >98%, >99%
- Bioactivity: ED50 = 0.1-1.0 ng/mL
- Endotoxin: <1 EU or <0.1 ng/mL (LAL method)
- Mycoplasma Negative
- ISO/IEC 17025/2017 Certified

Proven Track Record in Fluorescence Assays

Aurora Biolabs has been developing and manufacturing fluorescence and TR-FRET assays since 2007 to support drug discovery and optimization efforts. Our fluorescence assays are known for:

- Convenience: All reagents & rxn plate included.
- Proven Procedure: Optimized step-by-step protocols provided.

Components			
Catalog number	Item	Amount	Storage
190001B	Assay buffer	25 mL	-20°C
190001	Purified TEV protease	4 µg X 2 vials	-80°C
190001F	Fluorogenic substrate	200 µL	-80°C
190001S	5-FAM standard (1 mM)	10 µL	-80°C
	96-well microplate, black	1	Room temperature

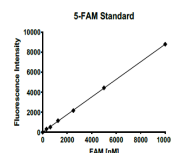
Assay protocol

A. Prepare assay buffer containing 1 mM DTT

For example, mix 998 µl of assay Buffer and 2 µl of 0.5 M DTT. Make only enough DTT-containing assay buffer as needed for the assay. Store the remaining assay buffer at -20°C.

B. Making 5-FAM standard curve

1. Dilute 1 mM 5-FAM to 20 µM with the assay buffer prepared at step A (assay buffer A).
2. Make 2-fold series of dilutions with the assay buffer A to get 10, 5, 2.5 1.25, 0.625, 0.3125 and 0 µM solutions.
3. Aliquot 50 µL of the diluted solution to each well (96-well plate).
4. Dilute substrate solution 25-fold with the assay buffer A.
5. Add 50 µl of diluted substrate to each well.
6. Measure fluorescent intensity at excitation of 490 nm and emission of 520 nm.
7. Use the same machine settings when measure TEV protease activity afterwards.



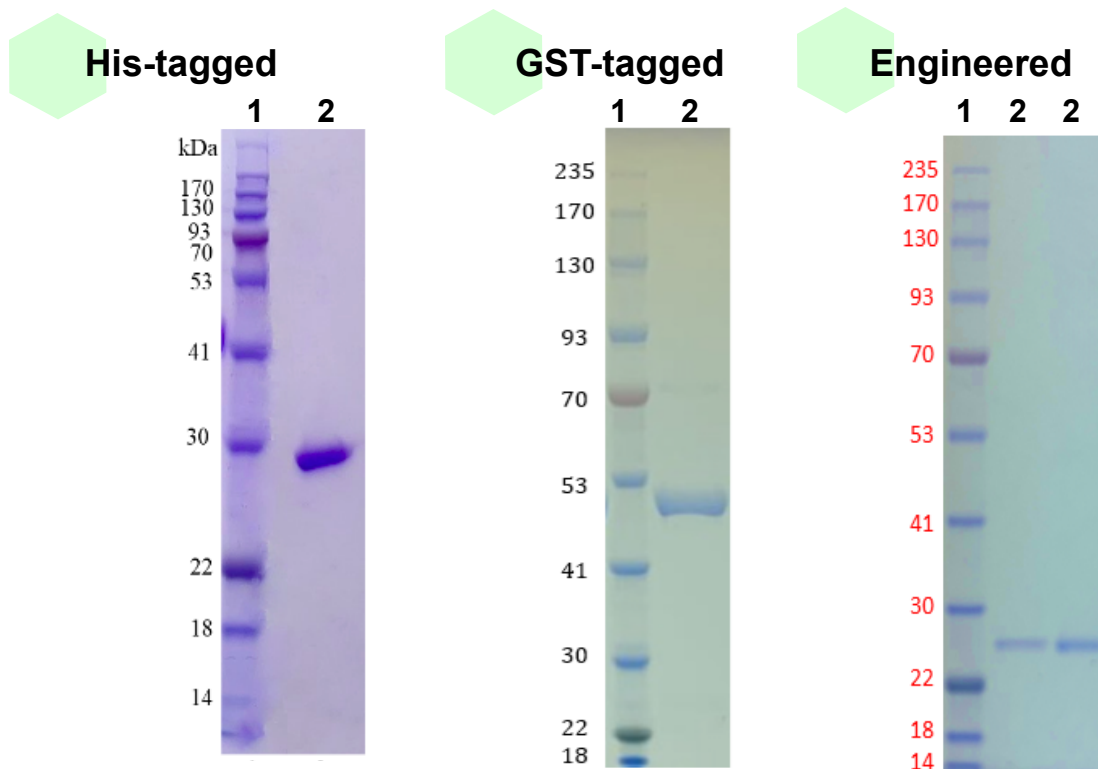
Unparalleled Technical Support

- Our assay scientists and developers have decades of experience working on assays for drug discovery and optimization. Assay-related issues are quickly answered and resolved by the same scientists and developers, who have intimate and expert knowledge on the assays and can address any issues with speed and accuracy.

Aurora Biolabs TEV Proteases

Recombinant proteins are often expressed with affinity tags for purification. The removal of these tags is often desired to restore the proteins to their native state and functionality. Tobacco Etch Virus (TEV) protease is ideal amino acid scissors for this purpose. TEV is a highly sequence-specific protease that recognizes 7-amino acid sequence Glu-Asn-Leu-Tyr-Phe-Gln-Gly/-Ser and cleaves between Gln-Gly/-Ser.

Aurora Biolabs has been manufacturing highly pure recombinant proteins since 2007. Aurora Biolabs currently has three TEV protease products: 1) His-tagged TEV, 2) GST-tagged TEV, and 3) Engineered TEV AB. His-tagged and GST-tagged TEVs are tagged with 6x histidines and glutathione s-transferase, respectively. TEV AB is an engineered TEV protease with enhanced protease activity.

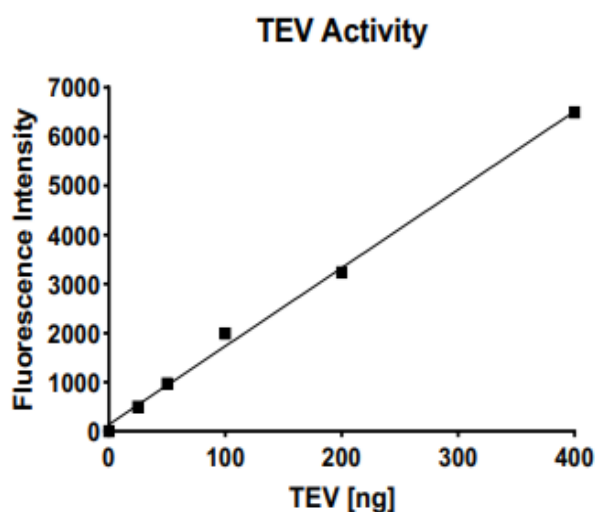
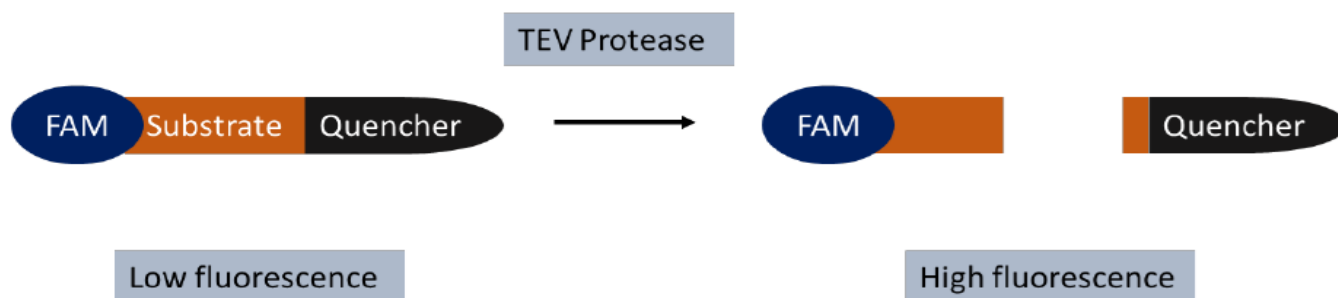


SDS PAGE pictures of purified his-tagged, GST-tagged, and engineered TEV proteases. Lane 1: molecular marker. Lane 2: TEV proteases.

Aurora Biolabs TEV Activity Assay Kit

The TEV Protease Activity Assay kit is a fluorogenic-based assay for measuring TEV protease activity. The kit contains a TEV protease substrate that is labeled with fluorophore FAM and a quencher. Proteolytic activity of TEV protease cleaves the substrate and releases FAM, resulting in the production of bright fluorescence, which can be measured using a fluorescence reader at ex/em of 490 nM/520 nm. TEV protease activity then can be calculated in accordance with the fluorescence intensity. Purified TEV protease is included in the kit as a positive control.

Assay Nuts and Bolts



Measurements of TEV activity as a function of fluorescence value at increasing concentrations of Aurora Biolabs his-tagged TEV and constant substrate concentration.

TEV Activity Assay Kit Applications

Optimization of Cleavage Conditions

Use: Test how buffer composition, temperature, pH, reducing agents, or additives affect TEV activity.

Why: TEV protease activity can vary significantly depending on conditions; this kit helps fine-tune the reaction.

Example: Determine whether TEV remains active in a buffer that also contains your target protein.

Troubleshooting Cleavage Reactions

Use: Check if failed tag removal is due to inactive TEV protease or substrate issues.

Why: Confirms whether the problem lies with enzyme activity or substrate accessibility.

Example: Run parallel reactions with the activity kit substrate and your recombinant protein.

Quality Control of TEV Protease Preparations

Use: To quantify the enzymatic activity (e.g., in units per mg) of your purified TEV protease.

Why: Ensures batch-to-batch consistency of purified or commercial TEV protease.

Example: Before using TEV protease in critical cleavage experiments (like protein crystallization), researchers verify its activity to avoid failures due to inactive enzyme.

Enzyme Stability Studies

Use: Test TEV activity after storage at different temperatures, freeze-thaw cycles, or lyophilization.

Why: Useful in both academic labs and biotech companies to validate storage protocols.