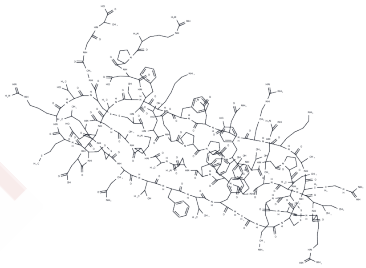
Data Sheet (Cat.No.T3359)

TargetMol

Aprotinin

Chemical Properties



CAS No. : 9087-70-1

Formula: C284H432N84O79S7

Molecular Weight: 6511.51

Storage: Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Aprotinin (Traskolan) is a broad-spectrum serine protease (BPTI) inhibitor that inhibits the activity of a number of different esterases and proteases. Aprotinin is an antifibrinolytic agent used to minimize hemorrhage during complex surgical procedures.
Targets(IC50)	Proteasome,Influenza Virus,Serine Protease
In vitro	**METHODS**: SARS-CoV-2 infected Caco2 cells were treated with Aprotinin (0-20 μM) for 48 h and cytopathic effect (CPE) was detected. **RESULTS**: Aprotinin showed antiviral effects on CPE formation in SARS-CoV-2 infected Caco2 cells with an IC50 range of 0.81 μM-1.03 μM. [1] **METHODS**: VSMCs cells were pretreated with Aprotinin (1-100 μM) for 1 h, treated with cytokines (10 ng/mL IL-1β+25 ng/ml TNF-α) for 12 h, and then the target gene and protein expression levels were detected by Western Blot and RT-PCR. **RESULTS**: Aprotinin stimulated a significant increase in HO-1 protein levels and mRNA levels with cytokines in a concentration-dependent manner. [2]
In vivo	**METHODS**: To study in vivo anti-influenza virus activity, Aprotinin (2 mg/kg) was administered intravenously twice daily for 5 days to lethally A/PR/8/34 (H1N1) virus-infected C57BL/6 mice. **RESULTS**: Aprotinin alone did not cause weight loss in mice, and the survival rate of PBS-treated mice was 0% at 8 days post-infection. Meanwhile, the group of mice treated with Aprotinin showed a 75% survival rate. [3]
Kinase Assay	Substrates and kinases are diluted in 50?mM Tris/HCl (pH?7.5), 0.1% 2-mercaptoethanol, 0.1?mM EGTA and 10?mM magnesium acetate. Reactions are initiated with [γ-32P]ATP (2500 c.p.m./pmol) to a final concentration of 0.1?mM and terminated after 15?min at 30°C by the addition of SDS and EDTA (pH?7.0) to final concentrations of 1.0% (w/v) and 20?mM respectively. After heating for 5?min at 100°C and separation by SDS/PAGE, the phosphorylated proteins are detected by autoradiography.
Cell Research	Mouse G8-1 myoblasts are plated DMEM + 20% FBS (maintenance medium), in which they remain undifferentiated. When cells reach approximately 40-50% confluence, different protease inhibitors are added to the culture media and cells are incubated overnight. Cells are then switched to differentiation-promoting media (DMEM + 10% horse serum ± protease inhibitor) and incubated for 7 days. (Only for Reference)

Solubility Information

Solubility	H2O: 242.5 mg/mL (37.24 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.1536 mL	0.7679 mL	1.5357 mL
5 mM	0.0307 mL	0.1536 mL	0.3071 mL
10 mM	0.0154 mL	0.0768 mL	0.1536 mL
50 mM	0.0031 mL	0.0154 mL	0.0307 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Bojkova D, et al. Aprotinin Inhibits SARS-CoV-2 Replication. Cells. 2020 Oct 30;9(11):2377.
Jiang T Y, Pan Y F, Wan Z H, et al. PTEN status determines chemosensitivity to proteasome inhibition in cholangiocarcinoma. Science Translational Medicine. 2020, 12(562).
Lee DH, et al. Aprotinin Inhibits Vascular Smooth Muscle Cell Inflammation and Proliferation via Induction of HO-1. Korean J Physiol Pharmacol. 2009 Apr;13(2):123-9.
Jiang T Y, Feng X F, Fang Z, et al. PTEN deficiency facilitates the therapeutic vulnerability to proteasome inhibitor bortezomib in gallbladder cancer. Cancer Letters. 2021, 501: 187-199.
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