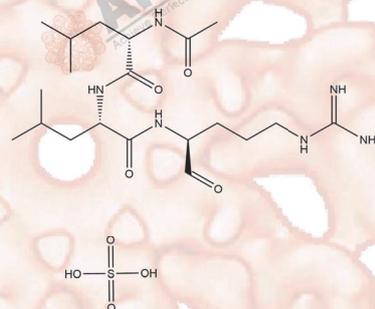


Product Data Sheet

Leupeptin, Microbial

Cat. No.:	A2570
CAS No.:	103476-89-7
Formula:	C ₂₀ H ₃₈ N ₆ O ₄ ·H ₂ SO ₄
M.Wt:	524.63
Synonyms:	Leupeptin hemisulfate salt microbial, L-Leucinamide, Leupeptin, Microbial
Target:	Proteases
Pathway:	Serine Protease
Storage:	Store at -20° C The product is not stable in solution, please dissolve it immediately before use.



Solvent & Solubility

≥24.7 mg/mL in DMSO; ≥53.5 mg/mL in EtOH; ≥54.4 mg/mL in H₂O

In Vitro

Preparing Stock Solutions	Solvent	Mass Concentration	Mass		
			1mg	5mg	10mg
		1 mM	2.1027 mL	10.5133 mL	21.0265 mL
		5 mM	0.4205 mL	2.1027 mL	4.2053 mL
		10 mM	0.2103 mL	1.0513 mL	2.1027 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary

Inhibitor of serine and cysteine proteases

IC₅₀ & Target

0.13 nM (Ki) (Trypsin), 7 nM (Ki) (Cathepsin B)

Cell Viability Assay

In Vitro

Cell Line:	MRC-C cells infected with HCV 229E
Preparation method:	The solubility of this compound in DMSO is ≥49.35mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored

	below -20°C for several months.	
Reacting conditions:	0, 1, 10 and 100 µg/mL; 24 hrs	
Applications:	In cultures of MRC-C cells, Leupeptin prevented multiplication of the human coronavirus strain 229E. The IC50 value of Leupeptin in plaque tests was 0.4 µg/mL, whilst growth of host cells was unaffected by Leupeptin at 50 µg/mL. In single-cycle growth experiments, Leupeptin (100 µg/mL) reduced virus yield only if added within 2 hrs of infection, indicating its action on an early stage of virus replication.	
In Vivo	Animal experiment	
	Animal models:	C57BL/6NCrI male mice
	Dosage form:	0, 9, 18 36 and 40 mg/kg; i.p.
	Applications:	Leupeptin was well tolerated by the animals and dose-dependently produced a substantial increase in LC3b-II in both the total tissue extracts and the lysosome enriched fraction (LE fraction). At the electron microscopy (EM) level, leupeptin induced the accumulation of electron-dense vesicular structures that, in hepatocytes, were visible by 60 min after treatment (40 mg/kg). The results suggested that Leupeptin enhanced LC3b-II levels in vivo by protecting this protein from being degraded inside lysosomes, and thus the leupeptin-based assay could be potentially used for studying the dynamics of macroautophagy in mice.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

See more customer validations on www.apexbt.com.

References

- [1]. Appleyard G, Tisdale M. Inhibition of the growth of human coronavirus 229E by leupeptin. *Journal of general virology*, 1985, 66(2): 363-366.
- [2]. Haspel J, Shaik RS, Ifedigbo E, Nakahira K, Dolinay T, Englert JA, Choi AM. Characterization of macroautophagic flux in vivo using a leupeptin-based assay. *Autophagy*. 2011 Jun;7(6):629-42.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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