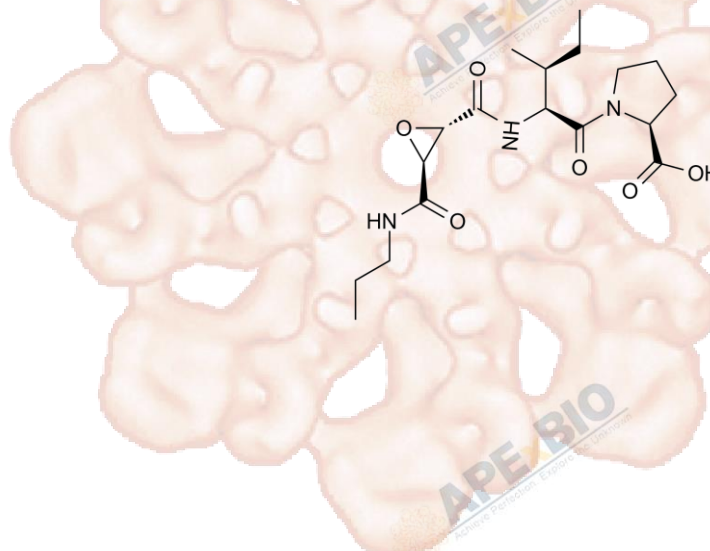


# Product Data Sheet

## CA 074

<b>Cat. No.:</b>	A1926
<b>CAS No.:</b>	134448-10-5
<b>Formula:</b>	C <sub>18</sub> H <sub>29</sub> N <sub>3</sub> O <sub>6</sub>
<b>M.Wt:</b>	383.44
<b>Synonyms:</b>	CA-074, CA074
<b>Target:</b>	Proteases
<b>Pathway:</b>	Cathepsin
<b>Storage:</b>	Store at -20°C



### Solvent & Solubility

In Vitro

 $\geq 19.17$  mg/mL in DMSO;  $\geq 31.3$  mg/mL in EtOH;  $\geq 5.91$  mg/mL in H<sub>2</sub>O with ultrasonic

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1mg	5mg	10mg
	1 mM		2.6080 mL	13.0398 mL	26.0797 mL
	5 mM		0.5216 mL	2.6080 mL	5.2159 mL
	10 mM		0.2608 mL	1.3040 mL	2.6080 mL

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

### Biological Activity

Shortsummary

Cathepsin B inhibitor

 IC<sub>50</sub> & Target

In Vitro

#### Cell Viability Assay

Cell Line:	Human umbilical vein endothelial cells (HUVECs)
Preparation method:	The solubility of this compound in DMSO is >10 mM. 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:	24 h; 10 mM

	Applications:	The effects on the viability of HUVECs of cathepsin B specific inhibitors 10 mM CA-074 (96.9±1.2% viability ) and its membrane-permeable analog CA-074-Me (101.7±0.4% viability) was negligible, as was that of Minocycline (102.3±2.6% ) at 10mM.
In Vivo	<b>Animal experiment</b>	
	Animal models:	Female Balb/c mice
	Dosage form:	50 mg/kg; intraperitoneal injection
	Applications:	To test the therapeutic efficacy of cysteine protease inhibitors in vivo, we treated 4T1.2 tumor –bearing mice with the selective CA-074 inhibitor. Treatment of 4T1.2 tumor–bearing mice with the inhibitor had no impact on primary tumor growth. However, analysis of metastasis revealed a significant difference between in the compounds. CA-074 treatment significantly decreased metastasis to lung (P < 0.05) and bone (P < 0.05).
	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

- 1.Ju L, Han J, et al. "Obesity-associated inflammation triggers an autophagy-lysosomal response in adipocytes and causes degradation of perilipin 1."Cell Death Dis. 2019 Feb 11;10(2):121.PMID:30741926
- 2.Zhang J, Wang J, et al. "Curcumin targetsthe TFEB-lysosome pathway for induction of autophagy. "Oncotarget. 2016 Sep 28.PMID:27689333

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## References

- [1] Premzl A, Turk V, Kos J. Intracellular proteolytic activity of cathepsin B is associated with capillary - like tube formation by endothelial cells in vitro[J]. Journal of cellular biochemistry, 2006, 97(6): 1230-1240.
- [2] Withana N P, Blum G, Sameni M, et al. Cathepsin B inhibition limits bone metastasis in breast cancer[J]. Cancer research, 2012, 72(5): 1199-1209.

## 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 APEX BIO 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

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of the product, follow the storage recommendations on the product data sheet.



**APExBIO Technology**

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