

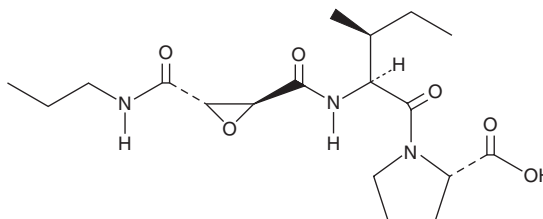
PRODUCT INFORMATION



CA-074

Item No. 24679

CAS Registry No.: 134448-10-5
Formal Name: N-[[3S-[(propylamino)carbonyl]-2S-oxiranyl]carbonyl]-L-isoleucyl-L-proline
MF: C₁₈H₂₉N₃O₆
FW: 383.4
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

CA-074 is supplied as a solid. A stock solution may be made by dissolving the CA-074 in the solvent of choice, which should be purged with an inert gas. CA-074 is soluble in the organic solvent methanol at a concentration of approximately 1 mg/ml.

Description

CA-074 is a selective epoxysuccinyl peptide inhibitor of the cysteine protease cathepsin B (K_i s = 0.0087, 75, and 233 μ M for rat cathepsin B, H, and L, respectively).¹ It inhibits degradation of DQ-collagen IV and DQ-collagen I in 4T1.2 breast cancer cells in a concentration-dependent manner and reduces the number of lung and bone metastases in a 4T1.2 murine mammary cancer model, without affecting primary tumor growth, when administered at a dose of 50 mg/kg.² CA-074 (0.1 and 0.2 mg/animal per day) reduces mercury-induced increases in expression of TNF- α , IL-1 β , and the inflammasome component NRLP3 and decreases the severity of mercury-induced skin induration in mice.³ CA-074 also reduces ischemia-induced hippocampal neuron cell death in monkeys.⁴

References

1. Murata, M., Miyashita, S., Tokoo, C., *et al.* Novel epoxysuccinyl peptides. Selective inhibitors of cathepsin B, *in vitro*. *FEBS Lett.* **280(2)**, 307-310 (1991).
2. Withana, N.P., Blum, G., Sameni, M., *et al.* Cathepsin B inhibition limits bone metastasis in breast cancer. *Cancer Res.* **72(5)**, 1199-1209 (2012).
3. Toomey, C.B., Cauvi, D.M., Hamel, J.C., *et al.* Cathepsin B regulates the appearance and severity of mercury-induced inflammation and autoimmunity. *Toxicol. Sci.* **142(2)**, 339-349 (2014).
4. Yamashima, T., Kohda, T., Tsuchiya, K., *et al.* Inhibition of ischaemic hippocampal neuronal death in primates with cathepsin B inhibitor CA-074: A novel strategy for neuroprotection based on 'calpain-cathepsin hypothesis'. *Eur. J. Neurosci.* **10(5)**, 1723-1733 (1998).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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