

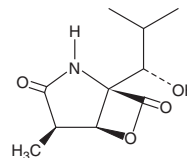
Product Information



Clasto-Lactacystin β -lactone

Item No. 70988

CAS Registry No.: 154226-60-5
Formal Name: 1R-[1S-1hydroxy-2-methylpropyl]-4R-methyl-6-oxa-2-azabicyclo[3.2.0]heptane-3,7-dione
Synonym: β -Clastolactacystin; Omuralide
MF: C₁₀H₁₅NO₄
FW: 213.2
Purity: \geq 98%
Stability: \geq 2 years at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

For long term storage, we suggest that clasto-lactacystin β -lactone be stored as supplied at -20°C. It should be stable for at least two years.

Lactacystin is a microbial metabolite isolated from *Streptomyces* that is now widely used as a selective inhibitor of the 20S proteasome.¹⁻³ Clasto-lactacystin β -lactone was later identified as the active metabolite of lactacystin, resulting from the elimination of cysteine and the formation of a reactive β -lactone. Both lactacystin and its β -lactone metabolite induce differentiation and inhibit cell cycle progression in several tumor cell lines.⁴ Clasto-lactacystin β -lactone irreversibly alkylates subunit X of the 20S proteasome.³ It is at least 10 times more active than the parent compound; this increased activity may be a function of increased cell permeability. Inhibition of proteasome peptidase activity results in the accumulation of a variety of ubiquitinated proteins which would normally undergo rapid degradation. Thus, the effects of clasto-lactacystin β -lactone are pleiotropic and depend substantially on the expression pattern of signalling proteins within the treated cell.

References

1. Omura, S., Fujimoto, T.T., Otoguro, K., *et al.* Lactacystin, a novel microbial metabolite, induces neuritogenesis of neuroblastoma cells, *J. Antibiotics* **44**, 113-116 (1991).
2. Corey, E.J. and Reichard, G.A. Total synthesis of lactacystin. *J. Am. Chem. Soc.* **114**, 10677-10678 (1992).
3. Fenteany, G. and Schreiber, S.L. Lactacystin, proteasome function, and cell fate. *J. Biol. Chem.* **273**(15), 8545-8548 (1998).
4. Fenteany, G., Standaert, R.F., Reichard, G.A., *et al.* A β -lactone related to lactacystin induces neurite outgrowth in a neuroblastoma cell line and inhibits cell cycle progression in an osteosarcoma cell line. *Proc. Natl. Acad. Sci. USA* **91**, 3358-3362 (1994).

Related Products

IU1 - Item No. 10617 • Lactacystin - Item No. 70980

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery.**

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a **refund** of the purchase price, or at Cayman's option, the **replacement**, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our **Warranty and Limitation of Remedy** located on our website and in our catalog.

Copyright Cayman Chemical Company, 03/11/2011

Cayman Chemical

Mailing address

1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone

(800) 364-9897
(734) 971-3335

Fax

(734) 971-3640

E-Mail

custserv@caymanchem.com

Web

www.caymanchem.com