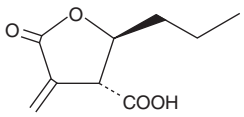
PRODUCT INFORMATION

Butyrolactone 3

Item No. 12095

CAS Registry No.: 778649-18-6
Formal Name: *rel*-tetrahydro-4-methylene-5-oxo-2R-propyl-3S-furancarboxylic acid
MF: $C_9H_{12}O_4$
FW: 184.2
Purity: ≥95%
Supplied as: A crystalline 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

Butyrolactone 3 is supplied as a crystalline solid. A stock solution may be made by dissolving the butyrolactone 3 in the solvent of choice, which should be purged with an inert gas. Butyrolactone 3 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of butyrolactone 3 in ethanol and DMSO is approximately 14 mg/ml and approximately 13 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of butyrolactone 3 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of butyrolactone 3 in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Gcn5 is a chromatin modifying factor whose HAT activity is required to acetylate histone H3 lysine 9 (K9) and K14, which facilitates transcription elongation by relaxing nucleosomes. Butyrolactone 3 specifically inhibits the histone acetyltransferase Gcn5 with an IC_{50} value of 100 µM and has an affinity to the Gcn5 enzyme comparable to that of its natural substrate, histone H3.[1] Butyrolactone 3 can inhibit pre-RNA splicing with an IC_{50} value of 0.5 mM and as such has been used to investigate Gcn5/PCAF-like HAT functions during assembly of spliceosome before pre-mRNA translation.[2]

References

1. Biel, M., Kretsovali, A., Karatzali, E., *et al.* Design, synthesis, and biological evaluation of a small-molecule inhibitor of the histone acetyltransferase Gcn5. *Angew. Chem. Int. Ed.* **43(30)**, 3974-3976 (2004).
2. Kuhn, A.N., Van Santen, M.A., Schwienhorst, A., *et al.* Stalling of spliceosome assembly at distinct stages by small-molecule inhibitors of protein acetylation and deacetylation. *RNA* **15(1)**, 153-175 (2009).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM