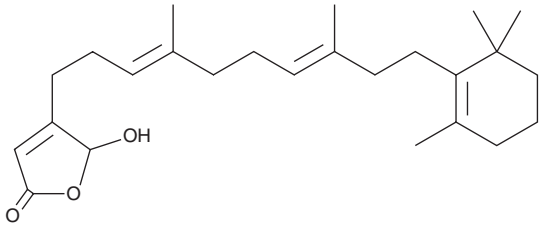
PRODUCT INFORMATION

Luffariellolide

Item No. 14902

CAS Registry No.: 111149-87-2
Formal Name: 4-[(3E,7E)-4,8-dimethyl-10-(2,6,6-trimethyl-1-cyclohexen-1-yl)-3,7-decadien-1-yl]-5-hydroxy-2(5H)-furanone
MF: $C_{25}H_{38}O_3$
FW: 386.6
Purity: ≥98%
Supplied as: An oil
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Luffariellolide is supplied as an oil. A stock solution may be made by dissolving the luffariellolide in the solvent of choice. Luffariellolide is soluble in organic solvents such as ethanol and DMSO.

Description

Luffariellolide is a natural sesterterpenoid which reversibly inhibits secretory phospholipase A_2 isoforms from bee venom (IC_{50} = 230 nM) and snake venom, reducing inflammation.[1] It blocks the production of platelet-activating factor in stimulated neutrophils (IC_{50} = 5 µM).[2] Luffariellolide is also a structural mimic of all-*trans* retinoic acid (RA) and, at 1 µM, acts as an agonist for the RA receptors RAR α, β, and γ but not for other nuclear receptors.[3] In RA-sensitive cancer cell lines, luffariellolide induces the expression of RAR target genes and inhibits cell growth.[3] It also inhibits the activation of hypoxia-inducible factor by hypoxia (IC_{50} = 3.6 µM).[4]

References

1. Calhoun, W., Yu, J., Sung, A., *et al*. Pharmacologic modulation of D-49 phospholipase A_2-induced paw edema in the mouse. *Agents Actions* **27(3-4)**, 418-421 (1989).
2. Glaser, K.B., Lock, Y.W., and Chang, J.Y. PAF and LTB_4 biosynthesis in the human neutrophil: Effects of putative inhibitors of phospholipase A_2 and specific inhibitors of 5-lipoxygenase. *Agents Actions* **34(1-2)**, 89-92 (1991).
3. Wang, S., Wang, Z., Lin, S., *et al*. Revealing a natural marine product as a novel agonist for retinoic acid receptors with a unique binding mode and inhibitory effects on cancer cells. *Biochem. J.* **446(1)**, 79-87 (2012).
4. Li, J., Du, L., Kelly, M., *et al*. Structures and potential antitumor activity of sesterterpenes from the marine sponge *Hyrtios communis*. *J. Nat. Prod.* **76(8)**, (2013)

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