

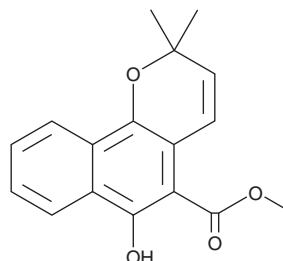
PRODUCT INFORMATION



Rubimaillin

Item No. 27999

CAS Registry No.: 55481-88-4
Formal Name: 6-hydroxy-2,2-dimethyl-2H-naphtho[1,2-b]pyran-5-carboxylic acid, methyl ester
Synonym: Mollugin
MF: C₁₇H₁₆O₄
FW: 284.3
Purity: ≥98%
UV/Vis.: λ_{max}: 217, 249, 274, 283, 393 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Plant/*Rubia tinctorum*



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

Laboratory Procedures

Rubimaillin is supplied as a crystalline solid. A stock solution may be made by dissolving the rubimaillin in the solvent of choice, which should be purged with an inert gas. Rubimaillin is soluble in the organic solvent chloroform at a concentration of approximately 30 mg/ml.

Description

Rubimaillin is a naphthohydroquinone that has been found in *R. cordifolia* with diverse biological activities.¹⁻⁴ It inhibits the growth of *E. coli* and *S. aureus* in a disc assay when used at a concentration of 100 µg per disc.¹ Rubimaillin scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) free radicals in a cell-free assay (IC₅₀ = 0.7 µM). It inhibits acetyl-CoA cholesterol acyltransferase 1 (ACAT1) and ACAT2 (IC₅₀s = 80 and 22 µM, respectively) and cholesterol ester synthesis (IC₅₀ = 18 µM) in murine macrophages.² Rubimaillin increases osteoblastic differentiation of C2C12 mesenchymal progenitor cells induced by bone morphogenic protein 2 (BMP2) and enhances skeletal development in zebrafish larvae.³ It inhibits TNF-α-induced NF-κB reporter gene expression and nuclear translocation of p65 and potentiates TNF-α-induced apoptosis in HeLa cells.⁴ Rubimaillin (25 and 75 mg/kg) reduces tumor growth in a HeLa mouse xenograft model.

References

1. Idhayadhulla, A., Xia, L., Lee, Y.R., *et al.* Synthesis of novel and diverse mollugin analogues and their antibacterial and antioxidant activities. *Bioorg. Chem.* **52**, 77-82 (2014).
2. Matsuda, D., Ohshiro, T., Ohba, M., *et al.* The molecular target of rubimaillin in the inhibition of lipid droplet accumulation in macrophages. *Biol. Pharm. Bull.* **32(8)**, 1317-1320 (2009).
3. Moon, S.-H., Kim, I., and Kim, S.H. Mollugin enhances the osteogenic action of BMP-2 via the p38-Smad signaling pathway. *Arch. Pharm. Res.* **40(11)**, 1328-1335 (2017).
4. Wang, Z., Li, M.Y., Mi, C., *et al.* Mollugin has an anti-cancer therapeutic effect by inhibiting TNF-α-induced NF-κB activation. *Int. J. Mol. Sci.* **18(8)**, 1619 (2017).

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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