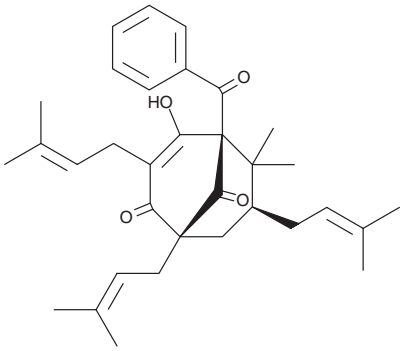
PRODUCT INFORMATION

Nemorosone

Item No. 24256



CAS Registry No.:	351416-47-2
Formal Name:	(1R,5S,7S)-*rel*- 5-benzoyl-4-hydroxy-6,6-dimethyl-1,3,7-*tris*(3-methyl-2-buten-1-yl)-bicyclo[3.3.1]non-3-ene-2,9-dione
MF:	$C_{33}H_{42}O_4$
FW:	502.7
Purity:	≥98%
UV/Vis.:	λ_{max}: 245, 276 nm
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

Nemorosone is supplied as a crystalline solid. A stock solution may be made by dissolving the nemorosone in the solvent of choice, which should be purged with an inert gas. Nemorosone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of nemorosone in these solvents is approximately 30 mg/ml.

Nemorosone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nemorosone should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Nemorosone has a solubility of approximately 0.125 mg/ml in a 1:7 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Nemorosone is a polycyclic polyprenylated acylphloroglucinol (PPAP) originally isolated from *C. rosea* that has antiproliferative properties.[1] Nemorosone inhibits growth of NB69, Kelly, SK-N-AS, and LAN-1 neuroblastoma cells (IC_{50}s = 3.1-6.3 µM), including several drug-resistant clones, but not MRC-5 human embryonic fibroblasts (IC_{50} = >40 µM).[2] It increases DNA fragmentation in LAN-1 cells in a dose-dependent manner, and decreases N-Myc protein levels and phosphorylation of ERK1/2 by MEK1/2. Nemorosone also inhibits growth of Capan-1, AsPC-1, and MIA-PaCa-2 pancreatic cancer cells (IC_{50}s = 4.5-5.0 µM following a 72-hour treatment) but not human dermal and foreskin fibroblasts (IC_{50}s = >35 µM).[1] It induces apoptosis, abolishes the mitochondrial membrane potential, and increases cytosolic calcium concentration in pancreatic cancer cells in a dose-dependent manner. Nemorosone activates the caspase cascade in a dose-dependent manner and inhibits cell cycle progression, increasing the proportion of cells in the G_0/G_1 phase, in both neuroblastoma and pancreatic cancer cells.[1,2] Nemorosone (50 mg/kg, i.p., per day) also reduces tumor growth in an MIA-PaCa-2 mouse xenograft model.[3]

References

1. Holtrup, F., Bauer, A., Fellenberg, K., *et al.* Microarray analysis of nemorosone-induced cytotoxic effects on pancreatic cancer cells reveals activation of the unfolded protein response (UPR). *Br. J. Pharmacol.* **162(5)**, 1045-1059 (2011).
2. Díaz-Carballo, D., Malak, S., Bardenheuer, W., *et al.* Cytotoxic activity of nemorosone in neuroblastoma cells. *J. Cell. Mol. Med.* **12(6B)**, 2598-2608 (2008).
3. Wold, R.J., Hilger, R.A., Hoheisel, J.D., *et al. In vivo* activity and pharmacokinetics of nemorosone on pancreatic cancer xenografts. *PLoS One* **8(9)**, e74555 (2013).

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