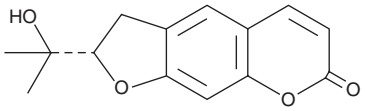
PRODUCT INFORMATION

Marmesin

Item No. 25049

CAS Registry No.:	13849-08-6
Formal Name:	(2S)-2,3-dihydro-2-(1-hydroxy-1-methylethyl)-7H-furo[3,2-g][1]benzopyran-7-one
Synonyms:	(+)-Marmesin, (S)-Marmesin, NSC 340840
MF:	$C_{14}H_{14}O_4$
FW:	246.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 224, 336 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

Marmesin is supplied as a crystalline solid. A stock solution may be made by dissolving the marmesin in the solvent of choice. Marmesin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of marmesin in these solvents is approximately 2, 50, and 30 mg/ml, respectively.

Marmesin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, marmesin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Marmesin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Marmesin is a coumarin originally isolated from the mature bark of *A. marmelos*.[1] Marmesin decreases proliferation and cell invasion induced by fetal bovine serum (FBS) in H1299 non-small cell lung cancer cells (NSCLCs) when used at a concentration of 10 µM.[2] It decreases VEGF secretion in A549 and H1299 cells and inhibits capillary-like structure formation by human umbilical vein endothelial cells (HUVECs). Marmesin also decreases proliferation of U937 human leukemia cells (IC_{50} = 40 µM).[3] It halts the cell cycle at the G_2/M phase, increases the ratio of Bax to Bcl-2 protein, induces apoptosis, and inhibits cell migration. Marmesin reduces tumor growth in a U937 mouse xenograft model when administered at a dose of 30 mg/kg.

References

1. Chatterjee, A. and Mitra, S.S. On the constitution of the active principles isolated from the mature bark of *Aegle marmelos*, Correâ. *J. Am. Chem. Soc.* **71(2)**, 606-609 (1949).
2. Kim, J.H., Kim, M.S., Lee, B.H., *et al.* Marmesin-mediated suppression of VEGF/VEGFR and integrin β1 expression: Its implication in non-small cell lung cancer cell responses and tumor angiogenesis. *Oncol. Rep.* **37(1)**, 91-97 (2017).
3. Dong, L., Xu, W.W., Li, H., *et al.* *In vitro* and *in vivo* anticancer effects of marmesin in U937 human leukemia cells are mediated via mitochondrial-mediated apoptosis, cell cycle arrest, and inhibition of cancer cell migration. *Oncol. Rep.* **39(2)**, 597-602 (2018).

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