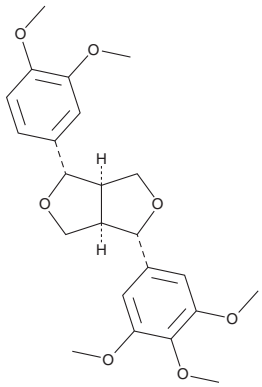
PRODUCT INFORMATION

Magnolin

Item No. 25123



CAS Registry No.:	31008-18-1
Formal Name:	(1S,3aR,4S,6aR)-1-(3,4-dimethoxyphenyl)tetrahydro-4-(3,4,5-trimethoxyphenyl)-1H,3H-furo[3,4-c]furan
Synonym:	(+)-Magnolin
MF:	$C_{23}H_{28}O_7$
FW:	416.5
Purity:	≥98%
UV/Vis.:	λ_{max}: 231, 278 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

Magnolin is supplied as a crystalline solid. A stock solution may be made by dissolving the magnolin in the solvent of choice. Magnolin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of magnolin in ethanol is approximately 0.5 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Magnolin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, magnolin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Magnolin 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

Magnolin is a lignan originally found in *M. fargesii* that has anti-inflammatory and anticancer activities.[1] It inhibits LPS-induced nitric oxide (NO) production in BV-2 cells (IC_{50} = 20.5 µM).[2] Magnolin inhibits ERK1 and ERK2 (IC_{50}s = 87 and 16.5 nM, respectively) and EGF-induced NF-κB transactivation activity when used at concentrations of 30 and 60 µM.[3] It suppresses migration of JB6 C141 cells in a concentration-dependent manner and decreases markers of epithelial-to-mesenchymal transition (EMT) in A549 cells. Magnolin decreases phosphorylation of Akt, increases caspase-3 levels, and upregulates p53 and p21 in PC3 and DU145 prostate cancer cells.[4] It inhibits proliferation, halts the cell cycle, and induces apoptosis in PC3 and DU145 cells when used at concentrations of 50 and 100 µM. Magnolin also reduces tumor growth and increases apoptosis of tumor cells in a PC3 prostate cancer mouse xenograft model when administered at a dose of 50 µmol/kg.

References

1. Kakisawa, H., Kusumi, T., Hsu, H.-Y., *et al.* Structures of lignans of *Magnolia fargesii*. *Bull. Chem. Soc. Jpn.* **43(11)**, 3631 (1970).
2. Kim, J.Y., Lim, H.J., Lee, D.Y., *et al.* In vitro anti-inflammatory activity of lignans isolated from *Magnolia fargesii*. *Bioorg. Med. Chem. Lett.* **19(3)**, 937-940 (2009).
3. Lee, C.-J., Lee, M.-H., Yoo, S.-M., *et al.* Magnolin inhibits cell migration and invasion by targeting the ERKs/RSK2 signaling pathway. *BMC Cancer* **15:576**, (2015).
4. Huang, Y., Zou, X., Zhang, X., *et al.* Magnolin inhibits prostate cancer cell growth *in vitro* and *in vivo*. *Biomed Pharmacother.* **87**, 714-720 (2017).

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