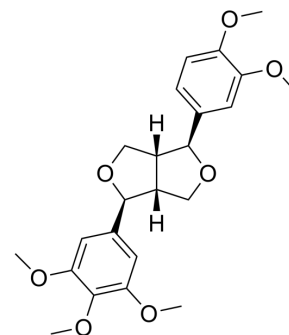


Magnolin

Cat. No.:	HY-N1374		
CAS No.:	31008-18-1		
Molecular Formula:	C ₂₃ H ₂₈ O ₇		
Molecular Weight:	416.46		
Target:	ERK		
Pathway:	MAPK/ERK Pathway; Stem Cell/Wnt		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	DMSO : 66.67 mg/mL (160.09 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	2.4012 mL	12.0060 mL	24.0119 mL
		5 mM	0.4802 mL	2.4012 mL	4.8024 mL
10 mM		0.2401 mL	1.2006 mL	2.4012 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (6.00 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (6.00 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (6.00 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Magnolin, a major component of Magnolia liliiflora, inhibits the Ras/ERKs/RSK2 signaling axis by targeting the active pocket of ERK1 and ERK2 with IC ₅₀ s of 87 nM and 16.5 nM, respectively.	
IC₅₀ & Target	ERK2 16.5 nM (IC ₅₀)	ERK1 87 nM (IC ₅₀)
In Vitro	Magnolin is a natural compound abundantly found in Magnolia flos, which has been traditionally used in oriental medicine	

to treat headaches, nasal congestion and anti-inflammatory reactions. Magnolin targets the active pockets of ERK1 and ERK2, which are important signaling molecules in cancer cell metastasis. Magnolin inhibits NF- κ B transactivation activity by suppressing the ERKs/RSK2 signaling pathway. Magnolin inhibits the production of tumor necrosis factor- α (TNF- α) and prostaglandin E2 (PGE2) by inhibiting extracellular signal-regulated kinases (ERKs), which are key signaling molecules in the regulation of cell proliferation, transformation and cancer cell metastasis. JB6 Cl41 cell migration enhanced by EGF treatment is dramatically suppressed by Magnolin treatment in a dose-dependent manner. Magnolin inhibits ERK1/2/RSK2 signaling-mediated I κ B α phosphorylation at Ser32, resulting in the inhibition of NF- κ B activation and cell migration^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay ^[1]

JB6 Cl41 (7×10^4), A549 (7×10^4) and NCI-H1975 (7×10^4) cells, and RSK2^{+/+} (7×10^4) and RSK2^{-/-} (7×10^4) MEFs are seeded into culture-inserts and cultured overnight. The cells are treated with mitomycin-C (10 μ g/mL) for 2 h, and the culture-inserts are removed to offer a cell-free gap. The cells are treated with the indicated doses of Magnolin (15, 30, and 60 μ M) either in the presence or absence of EGF for 12 or 24 h, and cell migration is observed under a light microscope. The migrated area is measured using the Image J computer software program. To measure the Magnolin effect on cancer cell invasion, a matrigel-coated invasion chamber is used. Briefly, A549 or NCI-H1975 (2.5×10^4) cells are seeded into an insert chamber with FBS-free media supplemented with the indicated doses of Magnolin (15, 30, and 60 μ M), and cultured in 24-well plates supplemented with complete media for the appropriate time period. The cells are fixed with 4 % formaldehyde, permeabilized with methanol and stained with crystal violet. The stained cells are observed under a light microscope and those that have migrated are counted^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Brain Res Bull. 2021 May 25;173:162-173.

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REFERENCES

[1]. Lee CJ, et al. Magnolin inhibits cell migration and invasion by targeting the ERKs/RSK2 signaling pathway. BMC Cancer. 2015 Aug 8;15:576.

Caution: Product has not been fully validated for medical applications. For research use only.

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