Morin

Cat. No.: HY-N0621

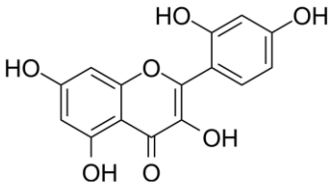
CAS No.: 480-16-0

Molecular Formula: $C_{15}H_{10}O_7$

Molecular Weight: 302.24

Target: Phosphatase; Apoptosis; Reactive Oxygen Species (ROS); Insulin Receptor

Pathway: Metabolic Enzyme/Protease; Apoptosis; Immunology/Inflammation; NF-κB; Protein Tyrosine Kinase/RTK



Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year

SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (827.16 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.3086 mL	16.5431 mL	33.0863 mL
5 mM	0.6617 mL	3.3086 mL	6.6173 mL
10 mM	0.3309 mL	1.6543 mL	3.3086 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (6.88 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.88 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Morin is an orally active plant-derived flavonoid. Morin inhibits ROS generation. Morin induces Apoptosis. Morin inhibits PTP1B (IC_{50} of 15 μM) and activates the insulin receptor. Morin has a detoxifying effect. Morin can be used in diabetes, leukemia, colon cancer, cervical cancer, Parkinson's disease and hypertension research[1][2][3][4][5][6][7][8][9][10][11][12].
In Vitro	Morin (25 μM, 1 h) protects V79-4 cells from hydrogen peroxide-induced damage by inhibiting ROS generation and by inducing catalase activation[3]. Morin (100-500 μM, 6-48 h) inhibits the growth of human leukemia HL-60 cells via cell cycle arrest and induction of apoptosis through mitochondria dependent pathway[4]. Morin (50 μM, 0-70 h) inhibits growth and activates the insulin metabolic pathway in HepG2 cells[5].

Morin (100-500 μM, 48 h) shows anti-cancerous activity against HeLa cells at an IC_{50} of 214.28 μM and causes morphological changes[6].
Morin (5-50 μM, 24 h) exerts neuroprotective actions in PC12 cells, with attenuating loss of cell viability[7].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[4]

Cell Line:	HL-60
Concentration:	100, 200, 300, 400, 500 μM
Incubation Time:	6 h, 12 h, 24 h, 48 h
Result:	Decreased the percentage of viable cells at a dose- and time-dependent manner.

Apoptosis Analysis[4]

Cell Line:	HL-60
Concentration:	100, 200, 300, 400, 500 μM
Incubation Time:	6 h, 12 h, 24 h, 48 h
Result:	Induced apoptosis in a dose-dependent manner. Promoted the activation of caspase-3.

Cell Cycle Analysis[4]

Cell Line:	HL-60
Concentration:	100, 200, 300, 400, 500 μM
Incubation Time:	6 h, 12 h, 24 h, 48 h
Result:	Induced G2/M arrest.

In Vivo

Morin (5-100 mg/kg, i.p., daily, 5 days) exerts neuroprotective actions in Parkinson disease mice[7].
Morin (10-150 mg/kg, i.p., 30 min prior to γ-irradiation) shows anticlastogenic activity against whole body gamma irradiation in Swiss albino mice[8].
Morin (100 mg/kg, intragastrically, 10 days) exacerbates Cyclophosphamide (HY-17420)-induced suppression of body weight gain in rats[9].
Morin (Morin hydrate form, 100 mg/kg, p.o., 10 days) attenuates Doxorubicin (HY-15142A)-induced heart and brain damage by reducing oxidative stress, inflammation and apoptosis in rats[10].
Morin (50 mg/kg, p.o., everyday for a total period of 30 weeks) could exert a significant chemopreventive effect on colon carcinogenesis induced by DMH in rats[11].
Morin (25-75 mg/kg, p.o., 6 weeks) exhibits strong antihypertensive effect against DOCA-salt induced hypertension in rats[12].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Pharm Anal. 2023 May;13(5):514-522.
- Phytomedicine. 2023 Jul 25:116:154866.
- Plant Physiol. 2023 Aug 31;193(1):821-839.

- Plant J. 2024 Jul;119(1):197-217.
- Plant Cell Rep. 2024 Dec 4;43(12):301.

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[2]. Kuo HM, et al. Morin inhibits the growth of human leukemia HL-60 cells via cell cycle arrest and induction of apoptosis through mitochondria dependent pathway. Anticancer Res. 2007 Jan-Feb;27(1A):395-405.

[3]. Paoli P, et al. The insulin-mimetic effect of Morin: a promising molecule in diabetes treatment. Biochim Biophys Acta. 2013 Apr;1830(4):3102-11.

[4]. Zhang Q, et al. Molecular mechanism of anti-cancerous potential of Morin extracted from mulberry in Hela cells. Food Chem Toxicol. 2018 Feb;112:466-475.

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[9]. Kuzu M, et al. Morin attenuates doxorubicin-induced heart and brain damage by reducing oxidative stress, inflammation and apoptosis. Biomed Pharmacother. 2018 Oct;106:443-453.

[10]. Sreedharan V, et al. Effect of morin on tissue lipid peroxidation and antioxidant status in 1, 2-dimethylhydrazine induced experimental colon carcinogenesis. Invest New Drugs. 2009 Feb;27(1):21-30.

[11]. Duthie G, et al. Antioxidant capacity of flavonoids in hepatic microsomes is not reflected by antioxidant effects in vivo. Oxid Med Cell Longev. 2012;2012:165127.

[12]. Lian HZ, et al. Morin applied in speciation of aluminium in natural waters and biological samples by reversed-phase high-performance liquid chromatography with fluorescence detection. Anal Bioanal Chem. 2003 Jun;376(4):542-8. Epub 2003 May 9.

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