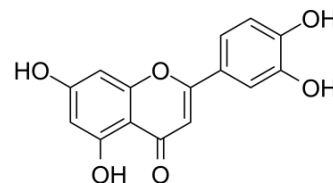


Luteolin

Cat. No.:	HY-N0162		
CAS No.:	491-70-3		
Molecular Formula:	C ₁₅ H ₁₀ O ₆		
Molecular Weight:	286.24		
Target:	Keap1-Nrf2; Apoptosis; Autophagy; Endogenous Metabolite		
Pathway:	NF-κB; Apoptosis; Autophagy; Metabolic Enzyme/Protease		
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 : ≥ 100 mg/mL (349.36 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.4936 mL	17.4679 mL	34.9357 mL
	5 mM	0.6987 mL	3.4936 mL	6.9871 mL
	10 mM	0.3494 mL	1.7468 mL	3.4936 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (8.73 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (8.73 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Luteolin (Luteoline), a flavanoid compound, is a potent Nrf2 inhibitor. Luteolin has anti-inflammatory, anti-cancer properties, including the induction of **apoptosis** and cell cycle arrest, and the inhibition of metastasis and angiogenesis, in several cancer cell lines, including human non-small lung cancer cells^{[1][2][3]}.

IC₅₀ & Target

Human Endogenous Metabolite
(□□□□)

In Vitro

Luteolin (0-160 μM; 24 hours; NCI-H460 cells) treatment inhibits the viability of NCI-H460 cells in a concentration-

dependent manner^[1].

Luteolin (20-80 μM ; 24 hours; NCI-H460 cells) treatment causes an accumulation of cells in the S phase^[1].

Luteolin (320-580 μM ; 48 hours; NCI-H460 cells) treatment induces apoptosis^[1].

Luteolin (20-80 μM ; 24 hours; NCI-H460 cells) treatment increases the protein expression levels of apoptotic regulatory proteins, including the Bax/Bcl-2 ratio, in a concentration-dependent manner, however, only 80 μM Luteolin inhibits the expression of Bad. Luteolin also decreases the expression of Sirt1 in the NCI-H460 cell line in a concentration-dependent manner^[1].

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

Cell Viability Assay^[1]

Cell Line:	NCI-H460 cells
Concentration:	0 μM , 20 μM , 40 μM , 80 μM and 160 μM
Incubation Time:	24 hours
Result:	Inhibited the viability of NCI-H460 cells in a concentration-dependent manner.

Cell Cycle Analysis^[1]

Cell Line:	NCI-H460 cells
Concentration:	20 μM , 40 μM , 80 μM
Incubation Time:	24 hours
Result:	Induced cell cycle arrest in the S phase.

Apoptosis Analysis^[1]

Cell Line:	NCI-H460 cells
Concentration:	320 μM , 440 μM , 580 μM
Incubation Time:	48 hours
Result:	Apoptotic fraction was markedly increased.

Western Blot Analysis^[1]

Cell Line:	NCI-H460 cells
Concentration:	20 μM , 40 μM , 80 μM
Incubation Time:	24 hours
Result:	Increased the protein expression levels of apoptotic regulatory proteins and decreased the expression of Sirt1 in the NCI-H460 cell line in a concentration-dependent manner.

In Vivo

Luteolin (10-100 mg/kg; oral gavage; daily; for 12 weeks; adult male Wistar rats) has an antioxidant effect and can also protect against non-alcoholic steatohepatitis through targeting the pro-inflammatory IL-1 and IL-18 pathways in rats with a high carbohydrate/high fat diet^[2].

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

Animal Model:	Adult male Wistar rats (200-220 g) ^[2]
Dosage:	10 mg/kg, 25 mg/kg, 50 mg/kg or 100 mg/kg
Administration:	Oral gavage; daily; for 12 weeks
Result:	Significantly reduced ALT and AST activity and reduced levels of bilirubin, hyaluronic acid and malondialdehyde. Shows an antioxidant activity such as a significant increase in reduced glutathione. IFN- γ , TNF- α , IL-1 α and IL-18 levels decreased significantly.

CUSTOMER VALIDATION

- **Front Pharmacol.** 2018 Jun 13;9:620.
- **Toxicol In Vitro.** 2020 Mar 10:104825.

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REFERENCES

- [1]. Ma L, et al. Luteolin exerts an anticancer effect on NCI-H460 human non-small cell lung cancer cells through the induction of Sirt1-mediated apoptosis. *Mol Med Rep.* 2015 Sep;12(3):4196-4202.
- [2]. Abu-Elsaad N, et al. Protection against nonalcoholic steatohepatitis through targeting IL-18 and IL-1alpha by luteolin. *Pharmacol Rep.* 2019 Aug;71(4):688-694.
- [3]. Xiuwen Tang, et al. Luteolin inhibits Nrf2 leading to negative regulation of the Nrf2/ARE pathway and sensitization of human lung carcinoma A549 cells to therapeutic drugs. *Free Radic Biol Med.* 2011 Jun 1;50(11):1599-609.

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

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