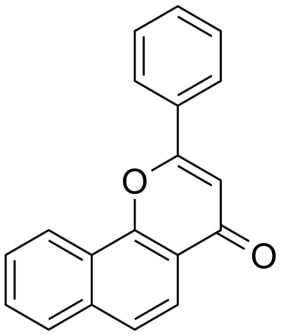
Alpha-Naphthoflavone

Cat. No.:	HY-125833
CAS No.:	604-59-1
Molecular Formula:	$C_{19}H_{12}O_2$
Molecular Weight:	272.3
Target:	Cytochrome P450; Aryl Hydrocarbon Receptor; Apoptosis
Pathway:	Metabolic Enzyme/Protease; Immunology/Inflammation; Apoptosis
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (91.81 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6724 mL	18.3621 mL	36.7242 mL
	5 mM	0.7345 mL	3.6724 mL	7.3448 mL
	10 mM	0.3672 mL	1.8362 mL	3.6724 mL

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

BIOLOGICAL ACTIVITY

Description

Alpha-Naphthoflavone is an orally active flavonoid that is a potent, competitive inhibitor of aromatase< b>aromatase. < b > IC < sub > 50 < / sub > < / b > and < b > K < sub > I < / sub > < / b > value were 0.5 and 0.2 microns. Alpha-Naphthoflavone can inhibit cell proliferation and induce apoptosis[1][2][3][4].

IC_{50} & Target

Aromatase

In Vitro

Alpha-Naphthoflavone (0.01-100 μM, 5 min) induces vascular relaxation by inducing extracellular calcium inflow and NO formation[2].

Alpha-Naphthoflavone (0.01-100 μM, 48 h) can inhibit HeLa cell proliferation, block the G1/S phase, and increase p53 level and apoptosis[3].

Alpha-Naphthoflavone (5, 10, 20, 40 μM, 24 h) can protect HepG2 hepatocytes treated with oleic acid (OA)[4].

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

Cell Proliferation Assay[3]

Cell Line:	HeLa

Concentration:	0.01, 1, 10, 100 μM
Incubation Time:	6 days
Result:	Decreased cell proliferation in a dose-dependent manner with IC_{50} value of 36.81 μM.

Apoptosis Analysis[3]

Cell Line:	HeLa
Concentration:	50 μM
Incubation Time:	12, 24, 36 h
Result:	Induced a mild but significant apoptosis rate.

Western Blot Analysis[3]

Cell Line:	HeLa
Concentration:	50 μM
Incubation Time:	12, 24, 36 h
Result:	Increased the level of p53 at 12 h.

In Vivo

Alpha-Naphthoflavone (80, 160 mg/kg/day, gavage for 4 weeks) has protective effects on NAFLD mice induced by high-fat diet (HFD)[4].

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

Animal Model:	HFD-induced mice model[4]
Dosage:	80, 160 mg/kg
Administration:	i.g.
Result:	Decreased the levels of AST, TG and TC.

CUSTOMER VALIDATION

- J Hazard Mater. 2021 Aug 15;416:125764.
- Phytomedicine. 2023 Mar 24;114:154774.
- J Agric Food Chem. 2022 Feb 21.
- AAPS J. 2021 Jun 28;23(4):91.
- Research Square Preprint. 2023 Oct 28.

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REFERENCES

[1]. Campbell DR, et al. Flavonoid inhibition of aromatase enzyme activity in human preadipocytes. J Steroid Biochem Mol Biol. 1993 Sep;46(3):381-8.

[2]. Cheng YW, et al. Alpha-naphthoflavone induces vasorelaxation through the induction of extracellular calcium influx and NO formation in endothelium. Naunyn Schmiedebergs Arch Pharmacol. 2003 Nov;368(5):377-85.

[3]. Flores-Pérez A, et al. Apoptosis induction and inhibition of HeLa cell proliferation by alpha-naphthoflavone and resveratrol are aryl hydrocarbon receptor-independent. Chem Biol Interact. 2018 Feb 1;281:98-105.

[4]. Xia H, et al. Alpha-naphthoflavone attenuates non-alcoholic fatty liver disease in oleic acid-treated HepG2 hepatocytes and in high fat diet-fed mice. Biomed Pharmacother. 2019 Oct;118:109287.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA