Dihydrocoumarin

Cat. No.: HY-N1926

CAS No.: 119-84-6

Molecular Formula: $C_9H_8O_2$

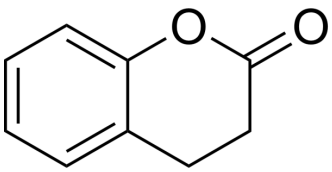
Molecular Weight: 148.16

Target: Sirtuin

Pathway: Cell Cycle/DNA Damage; Epigenetics

Storage:

Pure form	-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 (674.95 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	6.7495 mL	33.7473 mL	67.4946 mL
5 mM	1.3499 mL	6.7495 mL	13.4989 mL
10 mM	0.6749 mL	3.3747 mL	6.7495 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: ≥ 2.5 mg/mL (16.87 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (16.87 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (16.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dihydrocoumarin is a compound found in Melilotus officinalis. Dihydrocoumarin is a yeast Sir2p inhibitor. Dihydrocoumarin also inhibits human SIRT1 and SIRT2 with IC_{50}s of 208 μM and 295 μM, respectively[1].

IC_{50} & Target

hSIRT1	hSIRT2
208 μM (IC_{50})	295 μM (IC_{50})

In Vitro

Dihydrocoumarin induces a concentration-dependent inhibition of SIRT1 (IC_{50} of 208 μM) in an in vitro enzymatic assay. A

decrease in SIRT1 deacetylase activity is observed even at micromolar doses (85±5.8 and 73±13.7% activity at 1.6 μM and 8 μM, respectively). The microtubule SIRT2 deacetylase is also inhibited with a similar dose dependency (IC_{50} of 295 μM)[1].
Dihydrocoumarin (1-5 mM) increases cytotoxicity in the TK6 cell line in a dose-dependent manner following a 24-h exposure.
Dihydrocoumarin (1-5 mM) increases apoptosis in a dose-dependent manner in the TK6 cell line at the 6-h time point. A 5-mM dose of Dihydrocoumarin increases apoptosis at the 6-h time point in the TK6 cell line[1].
Dihydrocoumarin (1-5 mM) increases p53 lysine 373 and 382 acetylation in a dose-dependent manner in the TK6 cell line following a 24-h exposure period[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Olaharski AJ, et al. The flavoring agent Dihydrocoumarin reverses epigenetic silencing and inhibits sirtuindeacetylases. PLoS Genet. 2005 Dec;1(6):e77.

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