

## Emodin

## Chemical Properties

CAS No. :	518-82-1
Formula:	C <sub>15</sub> H <sub>10</sub> O <sub>5</sub>
Molecular Weight:	270.24
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

## Biological Description

Description	Emodin (Frangula emodin) is an 11 $\beta$ -HSD1 inhibitor with a selective IC <sub>50</sub> of 186 and 86 nM against 11 $\beta$ -HSD1 in humans and mice, respectively. Emodin has antiviral, anti-inflammatory, and anti-cancer effects. Emodin can improve metabolic disorders in diet-induced obese mice.
Targets(IC50)	Casein Kinase, Autophagy, Dehydrogenase, SARS-CoV
In vitro	<p><b>METHODS:</b> Human A375 cells were treated with Emodin for 24 hours, and MTT assay was used to detect the inhibition of cell growth.</p> <p><b>RESULTS:</b> Emodin inhibited the growth of A375 cells (IC<sub>50</sub>=44.91 <math>\mu</math>M). [1]</p> <p><b>METHODS:</b> Human A549 cells were treated with Emodin for 72 hours, and MTT assay was used to detect the inhibition of cell growth.</p> <p><b>RESULTS:</b> Emodin inhibited the growth of A549 cells (IC<sub>50</sub>=28 <math>\mu</math>M). [2]</p> <p><b>METHODS:</b> Mouse BALB/3T3 cells were treated with Emodin for 48 hours, and the cell growth inhibition was detected by Alamar blue assay.</p> <p><b>RESULTS:</b> Emodin inhibited the growth of BALB/3T3 cells (IC<sub>50</sub>=32 <math>\mu</math>M). [3]</p>
In vivo	<p><b>METHODS:</b> To study the effect of Emodin on 11<math>\beta</math>-HSD1 activity in mice, Emodin (100 mg/kg, 200 mg/kg) was orally administered to normal C57BL/6J male mice.</p> <p><b>RESULTS:</b> Emodin inhibited the activity of 11<math>\beta</math>-HSD1 in normal C57BL/6J male mice. [4]</p> <p><b>METHODS:</b> To study the effect of Emodin on metabolism in obese mice, Emodin (100 mg/kg) was orally administered to obese mice twice a day.</p> <p><b>RESULTS:</b> Emodin improved insulin sensitivity and lipid metabolism in diet-induced obesity (DIO) mice, and decreased blood glucose and liver PEPCK and glucose-6-phosphatase mRNA. [4]</p>
Cell Research	Emodin is prepared in DMSO and stored, and then diluted with appropriate medium before use[3]. The T24 human bladder cancer cells, the HCV-29 normal bladder epithelial cells and J82 human bladder cancer cells are cultured in RPMI 1640 medium supplemented with 10 % fetal bovine serum at 37°C in a humidified atmosphere containing 5 % CO <sub>2</sub> . Cells are seeded in 96-well plates with 2 $\times$ 10 <sup>4</sup> cells per well. The cells are incubated with Emodin for 24 h at different concentrations (0, 5, 10, 20, 30, 40, 50, 60, 70 $\mu$ M) and chose the critical concentration (20 $\mu$ M) treated with cells for 0, 6, 12, 24, 48, 72, 96 h. The cells are incubated with cisplatin for 24 h at different concentrations (0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 $\mu$ g/mL). MTT assay is used to analyze the cell viability. Cells are treated with drugs for 24 h and apoptotic rates are assessed with flow cytometry using AnnexinV-fluorescein isothiocyanate (AnnexinV-FITC)/propidium iodide (PI) kit.

Cell Research	Samples are prepared according to the manufacturer's instruction and analyzed by a flow cytometry (FCM) Calibur[3].
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### Solubility Information

Solubility	Acetone: 7.14 mg/mL (26.42 mM),Sonication is recommended. DMSO: 15.3 mg/mL (56.62 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble) Ethanol: 3 mg/mL (11.1 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.7004 mL	18.5021 mL	37.0041 mL
5 mM	0.7401 mL	3.7004 mL	7.4008 mL
10 mM	0.370 mL	1.8502 mL	3.7004 mL
50 mM	0.074 mL	0.370 mL	0.7401 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

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