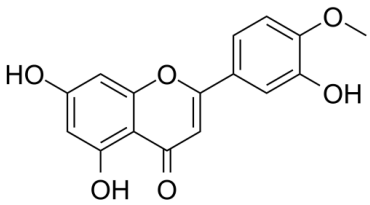
Data Sheet

Product Name:	Diosmetin
Cat. No.:	CS-5455
CAS No.:	520-34-3
Molecular Formula:	C16H12O6
Molecular Weight:	300.26
Target:	Cytochrome P450
Pathway:	Metabolic Enzyme/Protease
Solubility:	DMSO : ≥ 35 mg/mL (116.57 mM)



BIOLOGICAL ACTIVITY:

Diosmetin is a natural flavonoid which inhibits human **CYP1A** enzyme activity with an **IC_{50}** of 40 μM in HepG2 cell. IC50 & Target: IC50: 40 μM (Others, HepG2 cell)[1] **In Vitro:** Diosmetin inhibits cell proliferation in HepG2 cells in a concentration-dependent manner. Untreated HepG2 cells grow well and are observed to have with normal skeletons, whereas cells treated with diosmetin are distorted and a number of them become round and floating[1]. **In Vivo:** Pretreatment with diosmetin significantly reduces serum levels of amylase and lipase; the histological injury; the secretion of tumor necrosis factor (TNF)-α, interleukin (IL)-1β, and IL-6; myeloperoxidase (MPO) activity, trypsinogen activation peptide (TAP) level, the expression of inducible nitric oxide synthase (iNOS); and the nuclear factor (NF)-κB activation in cerulein-induced acute pancreatitis[2].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: [1]Diosmetin is dissolved in DMSO which is maintained at a constant concentration in control samples (2%). HepG2 cells are maintained in a humidified atmosphere of 5% CO_2 at 37°C, and cultured in RPMI-1640 medium supplemented with 10% (v/v) fetal bovine serum, 100 U/mL penicillin and 100 U/mL streptomycin. HepG2 cell density is adjusted to 2×10^4 cells/100 μL, and the cells are seeded into 96-well plates and placed in an incubator overnight (37°C in 5% CO_2) to allow for attachment and recovery. MTT analyses are performed. Briefly, cells are pretreated with 5, 10, 15 and 20 μg/mL diosmetin for 24 h. A total of 20 μL MTT solution (5 mg/mL in PBS) solution is transferred to each well to yield a final 120 μL/well and to separate wells a total of 10 μL CCK8 (5 mg/mL in PBS) is transferred. The plates are incubated for 4 h at 37°C in 5% CO_2 and the absorbance is recorded at wavelengths of 595 nm and 450 nm, respectively. The half maximal inhibitory concentration (IC_{50}) of diosmetin is calculated[1]. **Animal Administration:** Diosmetin is dissolved in vehicle (2% DMSO).[2]Experimental acute pancreatitis is induced in mice by seven intraperitoneal injection of cerulein (50 μg/kg) at hourly intervals. Diosmetin (100 mg/kg) or vehicle is pretreated 2 h before the first cerulein injection. After 6 h, 9 h, 12 h of the first cerulein injection, the severity of acute pancreatitis is evaluated biochemically and morphologically[2].

References:

[1]. Liu B, et al. Diosmetin induces apoptosis by upregulating p53 via the TGF-β signal pathway in HepG2 hepatoma cells. Mol Med Rep. 2016 Jul;14(1):159-64.

[2]. Yu G, et al. Diosmetin ameliorates the severity of cerulein-induced acute pancreatitis in mice by inhibiting the activation of the nuclear factor-κB. Int J Clin Exp Pathol. 2014 Apr 15;7(5):2133-42.

CAIndexNames:

4H-1-Benzopyran-4-one, 5,7-dihydroxy-2-(3-hydroxy-4-methoxyphenyl)-

SMILES:

O=C1C=C(C2=CC=C(OC)C(O)=C2)OC3=CC(O)=CC(O)=C13

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