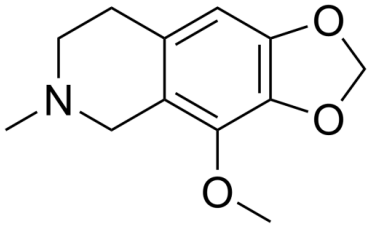
Data Sheet

Product Name:	Hydrocotarnine
Cat. No.:	CS-0237743
CAS No.:	550-10-7
Molecular Formula:	$C_{12}H_{15}NO_3$
Molecular Weight:	221.25
Target:	E1/E2/E3 Enzyme; Interleukin Related
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease
Solubility:	10 mM in DMSO



BIOLOGICAL ACTIVITY:

Hydrocotarnine is a **Cbl** inhibitor, and results in inflammasome-mediated IL-18 secretion in colitis. Hydrocotarnine increases expression of GLUT1 and cellular glucose uptake in glycolytic metabolism. Hydrocotarnine acts as an agent that provides analgesic effect in cancer research[1][2][3]. IC50 & Target: Cbl[1][2] **In Vitro:** Hydrocotarnine is an analgesic agent (CRIN-2), with the patent ID of WO2011160016A2[1].

Hydrocotarnine (10 μM; 1 h) elevates the secretion of IL-1β and IL-18, and (0.1-10 μM; 1 h) increases the global level of tyrosine-phosphorylated proteins in THP-1 cells[1].

Hydrocotarnine (50 μM; 0-100 min) increases the glycolytic capacity and glycolytic reserve capacity in THP-1-derived macrophages[2].

Hydrocotarnine (50 μM; 16 h) inhibits Cbl and increases the total GLUT1 protein in THP-1-derived macrophages[2].

Hydrocotarnine is known to enhance the analgesic effect of opioids, and alleviates cancer pain[3]. **In Vivo:** Hydrocotarnine (10 mg/kg/d; i.p.; 9 d) shows inhibitory effect on Cbl and results in increasing IL-18 levels, indicating that NLRP3 inflammasome activation is enhanced in mice[1].

Hydrocotarnine (10 mg/kg/d; i.p.; 9 d) protects mice from DSS-induced colitis, with low scores of pathological evaluation of inflammation, epithelial defects, and crypt atrophy[1].

References:

[1]. Chung IC, et al. Src-family kinase-Cbl axis negatively regulates NLRP3 inflammasome activation. Cell Death Dis. 2018 Oct 31;9(11):1109.

[2]. Lin HC, et al. Cbl Negatively Regulates NLRP3 Inflammasome Activation through GLUT1-Dependent Glycolysis Inhibition. Int J Mol Sci. 2020 Jul 19;21(14):5104.

[3]. Kim KU, et al. DITMD-induced mitotic defects and apoptosis in tumor cells by blocking the polo-box domain-dependent functions of polo-like kinase 1. Eur J Pharmacol. 2019 Mar 15;847:113-122.

CAIndexNames:

1,3-Dioxolo[4,5-g]isoquinoline, 5,6,7,8-tetrahydro-4-methoxy-6-methyl-

SMILES:

CN1CCC2=CC3=C(C(=C2C1)OC)OCO3

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

Tel: 610-426-3128 Fax: 888-484-5008 E-mail: sales@ChemScene.com

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