Oroxin B

Cat. No.: HY-N1435

CAS No.: 114482-86-9

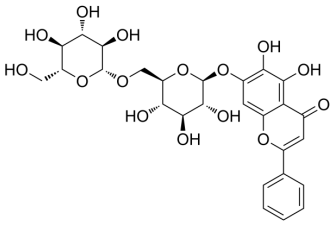
Molecular Formula: $C_{27}H_{30}O_{15}$

Molecular Weight: 594.52

Target: Apoptosis; PI3K; PTEN; Autophagy

Pathway: Apoptosis; PI3K/Akt/mTOR; Autophagy

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (168.20 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (ultrasonic) (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.6820 mL	8.4101 mL	16.8203 mL
5 mM	0.3364 mL	1.6820 mL	3.3641 mL
10 mM	0.1682 mL	0.8410 mL	1.6820 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 (4.21 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.21 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Oroxin B (OB) is a flavonoid isolated from traditional Chinese herbal medicine Oroxylum indicum (L.) Vent. Oroxin B (OB) possesses obvious inhibitory effect and induces early apoptosis rather than late apoptosis on liver cancer cells through upregulation of PTEN, down regulation of COX-2, VEGF, PI3K, and p-AKT[1].Oroxin B (OB) selectively induces tumor-suppressive ER stress in malignant lymphoma cells[2].

In Vitro

Oroxin B (0-2 μM, 48 h) inhibits the proliferation (48 h), and induces apoptosis (12 h) of the human hepatoma cell line (SMMC 7721)[1].
Oroxin B (0-2 μM, 48 h) increases PTEN and inhibits COX-2, VEGF, p-AKT, and PI3K in SMMC 7721[1].
Oroxin B (0-30 μM, 48 h) selectively induces ER stressin (stress marker: glyburide labeled by rhodamine) in Raji cell[2].
Oroxin B (160 μM, 24 h) inhibits IL-1β induced inflammation-related (iNOS, COX-2, TNF-α, IL-6, and IL-1β) markers in

chondrocytes[3].

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

RT-PCR[2]

Cell Line:	Raji cells
Concentration:	0-40 μM
Incubation Time:	48 h
Result:	Decreased ER stress master genes (GRP78 and ATF6) mRNA level.

In Vivo

Oroxin B (30 mg/kg, i.p., 28 days) induces malignant lymphoma cell ER stress, and inhibits tumor growth in human lymphoma cell (Raji cell) xenograft model[2].

Oroxin B (160 μM of 10 μL, injected into the knee joints of mice) protects articular cartilage in destabilized medial meniscus (DMM) induced mice OA[3].

Oroxin B (200 mg/kg/day, oral gavage) relieves hepatic inflammation and inhibits MAFLD progression in HFD-fed rats[4].

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

Animal Model:	Human lymphoma cell (Raji cell) xenograft model[2]
Dosage:	30 mg/kg
Administration:	i.p., 28 days
Result:	Induced malignant lymphoma cell ER stress. Inhibited tumor growth. Prolonged overall survival of tumor-bearing mice.

Animal Model:	HFD-fed rats[4]
Dosage:	200 mg/kg/day
Administration:	oral gavage
Result:	Reduced the levels of plasma lipids, LPS, IL-6, and TNF-α. Inhibited liver fibrosis by reducing collagen deposition.

CUSTOMER VALIDATION

- Mol Med Rep. 2021 Nov;24(5):766.
- Research Square Print. 2022 Jun.

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REFERENCES

[1]. Lu R, et al. Oroxin B alleviates osteoarthritis through anti-inflammation and inhibition of PI3K/AKT/mTOR signaling pathway and enhancement of autophagy. Front Endocrinol (Lausanne). 2022 Dec 1;13:1060721.

[2]. Huang Y, et al. Oroxin B improves metabolic-associated fatty liver disease by alleviating gut microbiota dysbiosis in a high-fat diet-induced rat model. Eur J Pharmacol.

2023 Jul 15;951:175788.

[3]. Li NN, et al. Evidence for the Involvement of COX-2/VEGF and PTEN/Pl3K/AKT Pathway the Mechanism of Oroxin B Treated Liver Cancer. Pharmacogn Mag. 2018 Apr-Jun;14(54):207-213.

[4]. Yang P, et al. Oroxin B selectively induces tumor-suppressive ER stress and concurrently inhibits tumor-adaptive ER stress in B-lymphoma cells for effective anti-lymphoma therapy. Toxicol Appl Pharmacol. 2015 Oct 15;288(2):269-79.

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