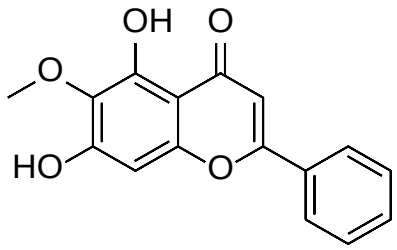
Product data sheet

MedKoo Cat#: 574127 Name: Oroxylin A CAS: 480-11-5 Chemical Formula: $C_{16}H_{12}O_5$ Exact Mass: 284.0685 Molecular Weight: 284.267	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Oroxylin A is a flavonoid that inhibits decreases in cell viability and increases in nitric oxide (NO) production induced by polyinosinic-polycytidylic acid (poly(I:C)) macrophages. Oroxylin A also inhibits poly(I:C)-induced increases in IL-1α, IL-1β, GM-CSF, IL-6, IL-10, monocyte chemoattractant protein-1 (MCP-1), and TNF-α production. Oroxylin A inhibits hypoxia-induced migration and invasion of MCF-7, DU145, and HepG2 cells in wound healing and cell invasion assays, respectively. It is an inhibitor of the UDP-glucuronosyltransferase (UGT) isoform UGT1A1and P-glycoprotein. Oroxylin A increases the cytotoxicity of the P-glycoprotein substrate paraquat in MDR1-MDCKII cells and paclitaxel.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	30.0	105.53
DMSO	39.63	139.42
DMSO:PBS (pH 7.2) (1:4)	0.20	0.70

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.52 mL	17.59 mL	35.18 mL
5 mM	0.70 mL	3.52 mL	7.04 mL
10 mM	0.35 mL	1.76 mL	3.52 mL
50 mM	0.07 mL	0.35 mL	0.70 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Dai Q, Yin Q, Wei L, Zhou Y, Qiao C, Guo Y, Wang X, Ma S, Lu N. Oroxylin A regulates glucose metabolism in response to hypoxic stress with the involvement of Hypoxia-inducible factor-1 in human hepatoma HepG2 cells. Mol Carcinog. 2016 Aug;55(8):1275-89. doi: 10.1002/mc.22369. Epub 2015 Aug 10. PMID: 26259145.
2. Wei L, Zhou Y, Qiao C, Ni T, Li Z, You Q, Guo Q, Lu N. Oroxylin A inhibits glycolysis-dependent proliferation of human breast cancer via promoting SIRT3-mediated SOD2 transcription and HIF1α destabilization. Cell Death Dis. 2015 Apr 9;6(4):e1714. doi: 10.1038/cddis.2015.86. PMID: 25855962; PMCID: PMC4650553.

In vivo study

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1. Yang J, Li J, Wang J, Wu J, Yin L, Dou H, Hou Y. Oroxylin A relieves intrauterine adhesion in mice through inhibiting macrophage pyroptosis via SIRT3-SOD2-ROS pathway. Int Immunopharmacol. 2023 Mar 17;118:110023. doi: 10.1016/j.intimp.2023.110023. Epub ahead of print. PMID: 36934562.
2. Zhu J, Chen H, Cui J, Zhang X, Liu G. Oroxylin A inhibited autoimmune hepatitis-induced liver injury and shifted Treg/Th17 balance to Treg differentiation. Exp Anim. 2023 Mar 13. doi: 10.1538/expanim.22-0171. Epub ahead of print. PMID: 36927981.

7. Bioactivity

Biological target:

Oroxylin A is a natural active flavonoid with strong anticancer effects.

In vitro activity

The data showed that oroxylin A remarkably reduced the generation of lactate and glucose uptake under hypoxia in HepG2 cells. Moreover, oroxylin A inhibited HIF-1α expression and its stability. The downstream targets (PDK1, LDHA, and HK II), as well as their mRNA levels were also suppressed by oroxylin A under hypoxia. The silencing or the overexpression of HIF-1α assays suggested that HIF-1α is required for metabolic effect of oroxylin A in HepG2 cells during hypoxia.

Reference: Mol Carcinog. 2016 Aug;55(8):1275-89. https://pubmed.ncbi.nlm.nih.gov/26259145/

In vivo activity

Here, an AIH model of mouse was induced by Concanavalin A (Con A). It found that serum aspartate aminotransferase (AST) and alanine aminotransferase (ALT) levels were decreased in mice with the treatment of OA (oroxylin A). ELISA analysis of cytokines and chemokines suggested that OA reduced the expression of IL-6, IL-17A, CCL2, CXCL1 and CXCL10, but promoted the expression of IL-10 and TGF-β in mice. The proportion of Treg/Th17 detected by flow cytometry revealed that OA promoted the differentiation of Treg and inhibited the differentiation of Th17 both in the liver and spleen.

Reference: Exp Anim. 2023 Mar 13. https://pubmed.ncbi.nlm.nih.gov/36927981/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.