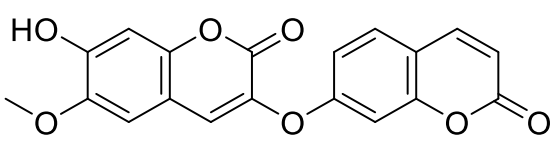


# Product data sheet



MedKoo Cat#: 471028 Name: Daphnoretin CAS#: 2034-69-7 Chemical Formula: C <sub>19</sub> H <sub>12</sub> O <sub>7</sub> Exact Mass: 352.0583 Molecular Weight: 352.298		
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:

Daphnoretin, also known as NSC291852, is an active constituent of *Wikstroemia indica* C. A. Meys which possesses anti-cancer activity. Inhibitory effect on mitosis. Daphnoretin also reduces proliferation, invasion, and migration of HCT116 colon cancer cells in a concentration-dependent manner

## 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
DMSO	100.0	283.85

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.84 mL	14.19 mL	28.39 mL
5 mM	0.57 mL	2.84 mL	5.68 mL
10 mM	0.28 mL	1.42 mL	2.84 mL
50 mM	0.06 mL	0.28 mL	0.57 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

- Gu S, He J. Daphnoretin induces cell cycle arrest and apoptosis in human osteosarcoma (HOS) cells. *Molecules*. 2012 Jan 9;17(1):598-612. doi: 10.3390/molecules17010598. PMID: 22231496; PMCID: PMC6268824.
- Jiang HF, Wu Z, Bai X, Zhang Y, He P. Effect of daphnoretin on the proliferation and apoptosis of A549 lung cancer cells in vitro. *Oncol Lett*. 2014 Sep;8(3):1139-1142. doi: 10.3892/ol.2014.2296. Epub 2014 Jun 30. PMID: 25120673; PMCID: PMC4114638.

### In vivo study

- Jegal J, Park NJ, Lee SY, Jo BG, Bong SK, Kim SN, Yang MH. Quercitrin, the Main Compound in *Wikstroemia indica*, Mitigates Skin Lesions in a Mouse Model of 2,4-Dinitrochlorobenzene-Induced Contact Hypersensitivity. *Evid Based Complement Alternat Med*. 2020 Jul 9;2020:4307161. doi: 10.1155/2020/4307161. PMID: 32695208; PMCID: PMC7368186.
- Chen CA, Liu CK, Hsu ML, Chi CW, Ko CC, Chen JS, Lai CT, Chang HH, Lee TY, Lai YL, Chen YJ. Daphnoretin modulates differentiation and maturation of human dendritic cells through down-regulation of c-Jun N-terminal kinase. *Int Immunopharmacol*. 2017 Oct;51:25-30. doi: 10.1016/j.intimp.2017.07.021. Epub 2017 Aug 1. PMID: 28772243.

# Product data sheet



## 7. Bioactivity

### Biological target:

Daphnoretin (Daphnoretin), isolated from *Wikstroemia indica*, possesses antiviral activity and directly activates protein kinase C which in turn activates NADPH oxidase and elicits respiratory burst.

### In vitro activity

To investigate the apoptosis-inducing effect of daphnoretin, A549 cells were treated with various concentrations of daphnoretin. Following treatment with daphnoretin (0 and 10  $\mu\text{mol/l}$ ) for 24 h, cells were analyzed using fluorescent microscopy with Hoechst 33324 staining. As shown in Fig. 3, chromatin condensation, nuclear fragmentation and apoptotic bodies were observed in the treated cells. The results revealed that when exposed to daphnoretin, A549 cells underwent the typical morphological changes that are associated with apoptosis. The ratio of apoptotic cells induced by daphnoretin was measured using flow cytometry. A549 cells were treated with various concentrations of daphnoretin (0, 5, 10 and 15  $\mu\text{mol/l}$ ) for 24 h and analyzed using flow cytometry with Annexin V and PI staining. As shown in Fig. 4, the ratio of early and late apoptotic cells was observed to be significantly increased in the daphnoretin-treated cells compared with the cells in the control group. The results show that when treated with daphnoretin for 24 h, the ratio of apoptotic cells significantly increased in a concentration-dependent manner.

Reference: *Oncol Lett.* 2014 Sep; 8(3): 1139–1142. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4114638/>

### In vivo activity

In disease model related to maturation of DCs (dendritic cells), daphnoretin suppressed the acute rejection of skin allografts in mice. These results suggest that daphnoretin modulated differentiation and maturation of DCs toward a state of atypical maturation with impaired allostimulatory function and this effect may go through down-regulation of phosphorylated JNK.

Reference: *Int Immunopharmacol.* 2017 Oct;51:25-30. <https://pubmed.ncbi.nlm.nih.gov/28772243/>

*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.*