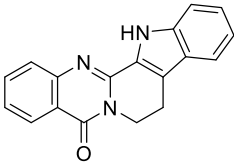


Product data sheet



MedKoo Cat#: 329838 Name: Rutaecarpine CAS: 84-26-4 Chemical Formula: C ₁₈ H ₁₃ N ₃ O Exact Mass: 287.1059 Molecular Weight: 287.32		
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:

Rutaecarpine, also known as NSC 258317, is a quinazolinone alkaloid originally isolated from *E. rutaecarpa* that has diverse biological activities. Rutaecarpine prevented dysfunction of endothelial gap junction induced by Ox-LDL via activation of TRPV1. Rutaecarpine inhibits angiotensin II-induced proliferation in rat vascular smooth muscle cells. Rutaecarpine ameliorates hyperlipidemia and hyperglycemia in fat-fed, streptozotocin-treated rats via regulating the IRS-1/PI3K/Akt and AMPK/ACC2 signaling pathways.

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	50	174.02

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.48 mL	17.40 mL	34.80 mL
5 mM	0.70 mL	3.48 mL	6.96 mL
10 mM	0.35 mL	1.74 mL	3.48 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

- Song C, Gong Z, Ji Y. Rutaecarpine ameliorates cardiomyocyte injury induced by high glucose by promoting TRPV1-mediated autophagy. *Bratisl Lek Listy*. 2023;124(9):699-706. doi: 10.4149/BLL_2023_107. PMID: 37635668.
- Lv J, Ji M, Yang H, Wang C, Zhang L, Ni H. Rutaecarpine attenuates high glucose-induced damage in AC16 cardiomyocytes by suppressing the MAPK pathway. *J Appl Toxicol*. 2023 Sep;43(9):1306-1318. doi: 10.1002/jat.4465. Epub 2023 Mar 29. PMID: 36928891.

In vivo study

- Wan J, Li M, Yuan X, Yu X, Chen A, Shao M, Kang H, Cheng P. Rutaecarpine ameliorates osteoarthritis by inhibiting PI3K/AKT/NF-κB and MAPK signalling transduction through integrin αVβ3. *Int J Mol Med*. 2023 Oct;52(4):97. doi: 10.3892/ijmm.2023.5300. Epub 2023 Sep 1. PMID: 37654229.
- Xu M, Shi Z, He Z, Ling X, Wang W, Liu H, Gong M. Rutaecarpine alleviates migraine in nitroglycerin-induced mice by regulating PTEN/PGK1 signaling pathway to activate NRF2 antioxidant system. *Biomed Pharmacother*. 2023 Aug 7;166:115300. doi: 10.1016/j.biopha.2023.115300. Epub ahead of print. PMID: 37557014.

Product data sheet



7. Bioactivity

Biological target:

Rutacarpine inhibits COX-2 and COX-1 dependent phases of PGD₂ generation in BMMC in a concentration-dependent manner with an IC₅₀ of 0.28 μ M and 8.7 μ M, respectively. It inhibits COX-2-dependent conversion of exogenous arachidonic acid to PGE₂ in a dose-dependent manner by the COX-2-transfected HEK293 cells.

In vitro activity

Rutacarpine demonstrated significant in vitro activity against high glucose (HG)-induced cardiomyocyte injury. It effectively inhibited apoptosis and oxidative stress in H9c2 cardiomyocyte cells exposed to HG levels. Additionally, rutacarpine activated TRPV1, inducing autophagy, which further contributed to its protective effects against HG-induced cellular damage.

Reference: Bratisl Lek Listy. 2023;124(9):699-706. <https://pubmed.ncbi.nlm.nih.gov/37635668/>

In vivo activity

Rutacarpine demonstrated promising in vivo activity in a mouse model of osteoarthritis (OA). It effectively reduced inflammation, cartilage degradation, chondrocyte apoptosis, senescence, and autophagy impairment induced by interleukin-1 β . Rutacarpine mediated the PI3K/Akt/NF- κ B and MAPK pathways, protecting cartilage. These findings highlight the potential therapeutic benefits of Rutacarpine for osteoarthritis treatment.

Reference: Int J Mol Med. 2023 Oct;52(4):97. <https://pubmed.ncbi.nlm.nih.gov/37654229/>

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.