

# Product data sheet



MedKoo Cat#: 407825 Name: Reticulol CAS#: 26246-41-3 Chemical Formula: C <sub>11</sub> H <sub>10</sub> O <sub>5</sub> Exact Mass: 222.0528 Molecular Weight: 222.20	
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:

Reticulol is an isocoumarin derivative produced by certain species of *Streptomyces* that inhibits cAMP phosphodiesterase (IC<sub>50</sub> = 41 μM).

## 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
To be determined	To be determined	To be determined

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.50 mL	22.50 mL	45.00 mL
5 mM	0.90 mL	4.50 mL	9.00 mL
10 mM	0.45 mL	2.25 mL	4.50 mL
50 mM	0.09 mL	0.45 mL	0.90 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

- Niu S, Liu Q, Xia JM, Xie CL, Luo ZH, Shao Z, Liu G, Yang XW. Polyketides from the Deep-Sea-Derived Fungus *Graphostroma* sp. MCCC 3A00421 Showed Potent Antifood Allergic Activities. *J Agric Food Chem*. 2018 Feb 14;66(6):1369-1376. doi: 10.1021/acs.jafc.7b04383. Epub 2018 Feb 2. PMID: 29355320.
- Boonlarpradab C, Suriyachadkun C, Suphothina S, Tobwor P. Bireticulol, a bioactive isocoumarin dimer from *Streptomyces* sp. BCC24731. *J Antibiot (Tokyo)*. 2011 Mar;64(3):267-70. doi: 10.1038/ja.2010.171. Epub 2011 Jan 12. PMID: 21224860.

### In vivo study

- Lim DS, Kwak YS, Lee KH, Ko SH, Yoon WH, Lee WY, Kim CH. Topoisomerase I inactivation by reticulol and its in vivo cytotoxicity against B16F10 melanoma. *Chemotherapy*. 2003 Sep;49(5):257-63. doi: 10.1159/000072451. PMID: 14504438.
- Lim DS, Kwak YS, Kim JH, Ko SH, Yoon WH, Kim CH. Antitumor efficacy of reticulol from *Streptovercillium* against the lung metastasis model B16F10 melanoma. Lung metastasis inhibition by growth inhibition of melanoma. *Chemotherapy*. 2003 Jun;49(3):146-53. doi: 10.1159/000070621. PMID: 12815208.

## 7. Bioactivity

### Biological target:

Reticulol is an isocoumarin derivative produced by certain species of *Streptomyces* that inhibits cAMP phosphodiesterase (IC<sub>50</sub> = 41 μM). It also inhibits DNA topoisomerase I when used at a concentration of 45 μM in B16F10 melanoma cells. Reticulol has

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antifungal activity against *T. mentagrophyes* with a MIC of 1.8  $\mu\text{M}$ . It is cytotoxic against A427 human lung and B16F10 mouse melanoma cells at concentrations of 25 and 200  $\mu\text{M}$ , respectively, and inhibits lung metastasis in mice.

## In vitro activity

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In this study, isolates were tested for antifungal bioactivities in immunoglobulin E-mediated rat basophilic leukemia-2H3 cells. Reticulol significantly decreased the rates of degranulation and histamine release with IC50 values of 13.5 and 13.7  $\mu\text{M}$ , respectively. These results suggest that reticulol could be a potential anti-food allergic medicine.

Reference: J Agric Food Chem. 2018 Feb 14;66(6):1369-1376. <https://pubmed.ncbi.nlm.nih.gov/29355320/>

## In vivo activity

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Reticulol combined with Adriamycin inhibited B16F10 melanoma tumor growth compared to mice treated with Adriamycin alone (1 mg/kg). These results suggested that reticulol inactivates Topo I, which is involved in tumor metastasis, and exhibits excellent cytotoxic efficacy against B16F10 melanoma, when combined with Adriamycin, in a mouse model.

Reference: Chemotherapy. 2003 Sep;49(5):257-63. <https://pubmed.ncbi.nlm.nih.gov/14504438/>

*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.*