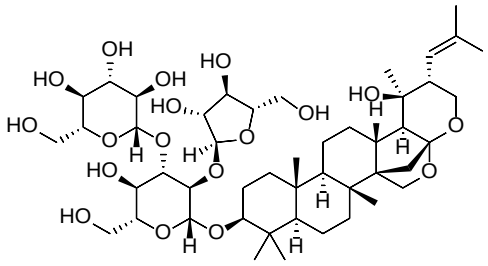
Product data sheet

MedKoo Cat#: 573967 Name: Bacopaside II CAS#: 382146-66-9 Chemical Formula: $C_{47}H_{76}O_{18}$ Exact Mass: 928.5032 Molecular Weight: 929.11	
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:
Bacopaside II is a triterpene glycoside found in B. monnieri that has neuroprotective, anti-angiogenic, and anticancer activities. Bacopaside II decreases hydrogen peroxide-induced intracellular reactive oxygen species (ROS) production and cell death in N2a neuroblastoma cells. Bacopaside II decreases migration and tube formation in 2H11 and 3B11 cells, as well as human umbilical vein endothelial cells (HUVECs) when used at concentrations greater than 15 µM. Bacopaside II inhibits the growth of MDA-MB-231, SHG-44, HCT8, A549, and PC3M cancer cells (IC50s = 32.4, 36.9, 40.3, 44.4, and 45.4 µM, respectively).

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

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.08 mL	5.38 mL	10.76 mL
5 mM	0.22 mL	1.08 mL	2.15 mL
10 mM	0.11 mL	0.54 mL	1.08 mL
50 mM	0.02 mL	0.11 mL	0.22 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. Palethorpe HM, Tomita Y, Smith E, Pei JV, Townsend AR, Price TJ, Young JP, Yool AJ, Hardingham JE. The Aquaporin 1 Inhibitor Bacopaside II Reduces Endothelial Cell Migration and Tubulogenesis and Induces Apoptosis. Int J Mol Sci. 2018 Feb 26;19(3):653. doi: 10.3390/ijms19030653. PMID: 29495367; PMCID: PMC5877514.
2. Smith E, Palethorpe HM, Tomita Y, Pei JV, Townsend AR, Price TJ, Young JP, Yool AJ, Hardingham JE. The Purified Extract from the Medicinal Plant Bacopa monnieri, Bacopaside II, Inhibits Growth of Colon Cancer Cells In Vitro by Inducing Cell Cycle Arrest and Apoptosis. Cells. 2018 Jul 21;7(7):81. doi: 10.3390/cells7070081. PMID: 30037060; PMCID: PMC6070819.

In vivo study

TBD

7. Bioactivity
Biological target: Bacopaside II blocks the Aquaporin-1 (AQP1) water channel and impairs migration of cells that express AQP1.

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In vitro activity

The AQP1 inhibitor bacopaside II, derived from medicinal plant Bacopa monnieri, was tested on endothelial cell migration and tube-formation in vitro using mouse endothelial cell lines (2H11 and 3B11) and human umbilical vein endothelial cells (HUVEC). The effect of bacopaside II on viability, apoptosis, migration and tubulogenesis was assessed by a proliferation assay, annexin-V/propidium iodide flow cytometry, the scratch wound assay and endothelial tube-formation, respectively. Cell viability was reduced significantly for 2H11 at 15 μM ($p = 0.037$), 3B11 at 12.5 μM ($p = 0.017$) and HUVEC at 10 μM ($p < 0.0001$). At 15 μM, the reduced viability was accompanied by an increase in apoptosis of 38%, 50% and 32% for 2H11, 3B11 and HUVEC, respectively. Bacopaside II at ⩾10 μM significantly reduced migration of 2H11 ($p = 0.0002$) and 3B11 ($p = 0.034$). HUVECs were most sensitive with a significant reduction at ⩾7.5 μM ($p = 0.037$). Tube-formation was reduced with a 15 μM dose for all cell lines and 10 μM for 3B11 ($p < 0.0001$).

Reference: Int J Mol Sci. 2018 Feb 26;19(3):653. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5877514/

In vivo activity

TBD

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.