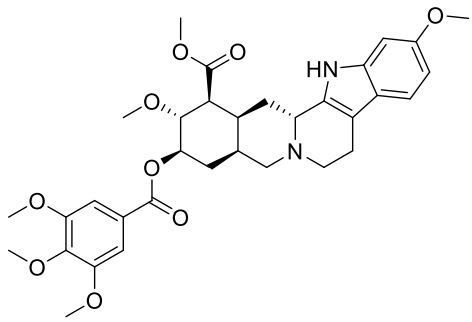
Product data sheet

MedKoo Cat#: 531034 Name: Reserpine CAS#: 50-55-5 (free) Chemical Formula: $C_{33}H_{40}N_2O_9$ Exact Mass: 608.2734 Molecular Weight: 608.69	
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:
Reserpine is an alkaloid vesicular monoamine transporter 2 (VMAT2) inhibitor. It is an alkaloid isolated from dried roots of R. serpentine. Reserpine has been used as an antihypertensive and an antipsychotic.

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	20	32.86
DMSO	10	16.43

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.64 mL	8.21 mL	16.43 mL
5 mM	0.33 mL	1.64 mL	3.29 mL
10 mM	0.16 mL	0.82 mL	1.64 mL
50 mM	0.03 mL	0.16 mL	0.33 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. Ramamoorthy MD, Kumar A, Ayyavu M, Dhiraviam KN. Reserpine Induces Apoptosis and Cell Cycle Arrest in Hormone Independent Prostate Cancer Cells through Mitochondrial Membrane Potential Failure. Anticancer Agents Med Chem. 2018;18(9):1313-1322. doi: 10.2174/1871520618666180209152215. PMID: 29424320.
2. Bhat UG, Winter MA, Pearce HL, Beck WT. A structure-function relationship among reserpine and yohimbine analogues in their ability to increase expression of mdr1 and P-glycoprotein in a human colon carcinoma cell line. Mol Pharmacol. 1995 Oct;48(4):682-9. PMID: 7476894.

In vivo study

1. Skurikhin EG, Ermakova NN, Pershina OV, Krupin VA, Pakhomova AV, Dygai AM. Response of Hematopoietic Stem and Progenitor Cells to Reserpine in C57Bl/6 Mice. Bull Exp Biol Med. 2016 Feb;160(4):439-43. doi: 10.1007/s10517-016-3191-y. Epub 2016 Feb 23. PMID: 26902356.
2. Stanwood GD, Lucki I, McGonigle P. Differential regulation of dopamine D2 and D3 receptors by chronic drug treatments. J Pharmacol Exp Ther. 2000 Dec;295(3):1232-40. PMID: 11082460.

7. Bioactivity
Biological target:

Product data sheet

Reserpine irreversibly inhibits both human isoforms of vesicular monoamine transporter, VMAT1 and VMAT2 (Kis = 34 and 12 nM, respectively). As this leads to metabolism of monoamines, reserpine is used to experimentally deplete monoamines in animals. Reserpine inhibits the multidrug resistance protein P-glycoprotein (IC50 = 0.5 μM).

In vitro activity

Reserpine inhibits DNA synthesis by arresting prostate cancer cells at the G2 phase and showed all standard sequential features of apoptosis including, destabilization of mitochondrial membrane potential, reduced production of reactive oxygen species and DNA ladder formation. Reserpine could be a novel therapeutic agent for the treatment of androgen-independent prostate cancer.

Reference: Anticancer Agents Med Chem. 2018;18(9):1313-1322. https://pubmed.ncbi.nlm.nih.gov/29424320/

In vivo activity

In cyclophosphamide-treated C57Bl/6 mice, reserpine reduced the level of short-term hematopoietic stem cells and increased the count of progenitor hematopoietic cells in the bone marrow in parallel with recruitment of the progenitors into the peripheral blood.

Reference: Bull Exp Biol Med. 2016 Feb;160(4):439-43. https://pubmed.ncbi.nlm.nih.gov/26902356/