

Product data sheet



MedKoo Cat#: 540294 Name: Methyl dopa Sesquihydrate CAS: 41372-08-1 Chemical Formula: C ₂₀ H ₃₂ N ₂ O ₁₁ Molecular Weight: 238.240	
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:

Methyl dopa Sesquihydrate is a DOPA decarboxylase inhibitor and indirect α 2-adrenergic receptor agonist used to treat hypertension. It inhibits the sympathetic nervous system, decreases production of dopamine, norepinephrine, and epinephrine, and exhibits NO-dependent sedative activity.

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	35.5	149.01
Water	1.0	4.20

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.20 mL	20.99 mL	41.97 mL
5 mM	0.84 mL	4.20 mL	8.39 mL
10 mM	0.42 mL	2.10 mL	4.20 mL
50 mM	0.08 mL	0.42 mL	0.84 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

- Xu B, Bobek G, Makris A, Hennessy A. Antihypertensive methyl dopa, labetalol, hydralazine, and clonidine reversed tumour necrosis factor- α inhibited endothelial nitric oxide synthase expression in endothelial-trophoblast cellular networks. *Clin Exp Pharmacol Physiol*. 2017 Mar;44(3):421-427. doi: 10.1111/1440-1681.12712. PMID: 27998008.
- Kirtland HH 3rd, Mohler DN, Horwitz DA. Methyl dopa inhibition of suppressor-lymphocyte function: a proposed cause of autoimmune hemolytic anemia. *N Engl J Med*. 1980 Apr 10;302(15):825-32. doi: 10.1056/NEJM198004103021502. PMID: 6244489.

In vivo study

- Kapoor V, Chalmers J. Correlation between fall in blood pressure and in vivo amine release after alpha-methyl DOPA. *Eur J Pharmacol*. 1989 May 30;164(3):531-8. doi: 10.1016/0014-2999(89)90261-6. PMID: 2767124.
- Fox GR, Virgo BB. The effects of phenobarbital, atropine, L-alpha-methyl dopa, and DL-propranolol on dieldrin-induced hyperglycemia in the adult rat. *Toxicol Appl Pharmacol*. 1985 May;78(3):342-50. doi: 10.1016/0041-008x(85)90239-x. PMID: 4049384.

7. Bioactivity

Biological target:

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Methyldopa hydrate (L-(-)- α -Methyldopa hydrate), a potent antihypertensive agent, is an α -adrenergic agonist (selective for α_2 -adrenergic receptors).

In vitro activity

After endothelial cellular networks appeared, trophoblast derived HTR-8/SVneo cells were co-cultured in the presence of clinically relevant doses of methyldopa, labetalol, hydralazine or clonidine for 24 hours. Methyldopa, labetalol, hydralazine and clonidine reversed the inhibitory effect of TNF- α on eNOS mRNA expression.

Reference: Clin Exp Pharmacol Physiol. 2017 Mar;44(3):421-427. <https://pubmed.ncbi.nlm.nih.gov/27998008/>

In vivo activity

Blood pressure (BP), hypothalamic tissue concentrations and the in vivo overflow of endogenous and alpha-methylated catecholamines were measured in urethane anaesthetised rats after alpha-methylDOPA (mDOPA) administration (200 mg/kg i.p.). Four hours after mDOPA, BP fell to its lowest value, 60% of control, and slowly returned towards control levels by 24 h.

Reference: Eur J Pharmacol. 1989 May 30;164(3):531-8. <https://pubmed.ncbi.nlm.nih.gov/2767124/>

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.