

Product data sheet



MedKoo Cat#: 329655 Name: Clorgyline HCl CAS#: 17780-75-5 (HCl) Chemical Formula: C ₁₃ H ₁₆ Cl ₃ NO Molecular Weight: 308.627	 H-Cl
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:

Clorgyline, also known as Clorgiline, M&B 9302 or MB9302, is a monoamine oxidase inhibitor (MAOI) structurally related to pargyline which is described as an antidepressant. Specifically, it is an irreversible and selective inhibitor of monoamine oxidase A (MAO-A). Clorgiline was never marketed, but it has found use in scientific research. In addition to its actions as an MAOI, clorgiline has been found to bind with high affinity to the $\sigma 1$ receptor ($K_i = 3.2$ nM) and with very high affinity to the I2 imidazoline receptor (an allosteric site on the monoamine oxidase enzyme) ($K_i = 40$ pM).

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	55.0	178.21
DMF	15.0	48.60
Ethanol	15.0	48.60
Ethanol:PBS (pH 7.2) (1:10)	0.25	0.81
Water	120.0	388.82

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.24 mL	16.20 mL	32.40 mL
5 mM	0.65 mL	3.24 mL	6.48 mL
10 mM	0.32 mL	1.62 mL	3.24 mL
50 mM	0.06 mL	0.32 mL	0.65 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. Holmes AR, Keniya MV, Ivnitski-Steele I, Monk BC, Lamping E, Sklar LA, Cannon RD. The monoamine oxidase A inhibitor clorgyline is a broad-spectrum inhibitor of fungal ABC and MFS transporter efflux pump activities which reverses the azole resistance of *Candida albicans* and *Candida glabrata* clinical isolates. *Antimicrob Agents Chemother.* 2012 Mar;56(3):1508-15. doi: 10.1128/AAC.05706-11. Epub 2011 Dec 27. PMID: 22203607; PMCID: PMC3294898.

In vivo study

1. Garcia-Miralles M, Ooi J, Ferrari Bardile C, Tan LJ, George M, Drum CL, Lin RY, Hayden MR, Pouladi MA. Treatment with the MAO-A inhibitor clorgyline elevates monoamine neurotransmitter levels and improves affective phenotypes in a mouse model of Huntington disease. *Exp Neurol.* 2016 Apr;278:4-10. doi: 10.1016/j.expneurol.2016.01.019. Epub 2016 Jan 26. PMID: 26825854.

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2. Ledesma JC, Escrig MA, Pastor R, Aragon CM. The MAO-A inhibitor clorgyline reduces ethanol-induced locomotion and its volitional intake in mice. *Pharmacol Biochem Behav.* 2014 Jan;116:30-8. doi: 10.1016/j.pbb.2013.11.012. Epub 2013 Nov 16. PMID: 24252443.

7. Bioactivity

Biological target:

Clorgyline hydrochloride is an irreversible and selective inhibitor of monoamine oxidase A (MAO-A) that is used in scientific research; structurally related to Pargyline.

In vitro activity

Clorgyline inhibited CaCdr1p efflux activity by 98.2% and also inhibited CaCdr2p by 93.8%.

Reference: *Antimicrob Agents Chemother.* 2012 Mar; 56(3): 1508–1515. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3294898/>

In vivo activity

This study first assessed the effect of different doses of clorgyline treatment (0.5, 1.5, or 3 mg/kg) on the enzymatic activity of MAO-A in the cortex of WT mice. Clorgyline treatment for 21 days resulted in a significant inhibition of MAO-A enzymatic activity compared with vehicle-treated animals (Fig. 2A; one-way ANOVA with Tukey's post hoc analysis; $p < 0.0001$).

Reference: *Exp Neurol.* 2016 Apr;278:4-10. <https://pubmed.ncbi.nlm.nih.gov/26825854/>

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.