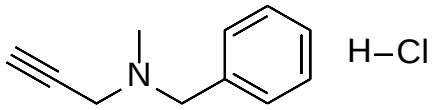
Product data sheet

MedKoo Cat#: 318456 Name: Pargyline Hydrochloride CAS: 306-07-0 Chemical Formula: $C_{11}H_{14}ClN$ Molecular Weight: 195.69	
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:

Pargyline hydrochloride is a monoamine oxidase inhibitor with antihypertensive properties. Pargyline selectively inhibits MAO type B, an enzyme catalyzing the oxidative deamination and inactivation of certain catecholamines, such as norepinephrine and dopamine, within the presynaptic nerve terminals. By inhibiting the metabolism of these biogenic amines in the brain, pargyline increases their concentration and binding to postsynaptic receptors.

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	20.0	102.20
DMSO	30.33	155.01
Ethanol	34.5	176.30
PBS (pH 7.2)	5.0	25.55
Water	69.5	355.15

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	5.11 mL	25.55 mL	51.10 mL
5 mM	1.02 mL	5.11 mL	10.22 mL
10 mM	0.51 mL	2.56 mL	5.11 mL
50 mM	0.10 mL	0.51 mL	1.02 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. Lee HT, Choi MR, Doh MS, Jung KH, Chai YG. Effects of the monoamine oxidase inhibitors pargyline and tranylcypromine on cellular proliferation in human prostate cancer cells. Oncol Rep. 2013 Oct;30(4):1587-92. doi: 10.3892/or.2013.2635. Epub 2013 Jul 24. PMID: 23900512; PMCID: PMC3810355.

In vivo study

1. Wang M, Liu X, Guo J, Weng X, Jiang G, Wang Z, He L. Inhibition of LSD1 by Pargyline inhibited process of EMT and delayed progression of prostate cancer in vivo. Biochem Biophys Res Commun. 2015 Nov 13;467(2):310-5. doi: 10.1016/j.bbrc.2015.09.164. Epub 2015 Oct 3. PMID: 26435505.

2. Chaaya R, Alfarano C, Guilbeau-Frugier C, Coatrieux C, Kesteman AS, Parini A, Fares N, Gue M, Schanstra JP, Bascands JL. Pargyline reduces renal damage associated with ischaemia-reperfusion and cyclosporin. Nephrol Dial Transplant. 2011 Feb;26(2):489-98. doi: 10.1093/ndt/gfq445. Epub 2010 Jul 28. PMID: 20667995.

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7. Bioactivity

Biological target:

Pargyline hydrochloride is an irreversible monoamine oxidase (MAO) inhibitor with Kis of 13 μM and 0.5 μM for MAO-A and MAO-B.

In vitro activity

The purpose of this study was to investigate the effects of the MAO inhibitors, pargyline and tranylcypromine on cell survival in human prostate carcinoma (LNCaP-LN3) cells. The proliferation of cells exposed to pargyline decreased in a dose- and time-dependent manner, while tranylcypromine-treated cells showed the opposite results. Treatment with pargyline significantly induced cell cycle arrest at the G1 phase compared to the control and tranylcypromine-treated cells. In addition, pargyline induced an increase in the cell death rate by promoting apoptosis; however, tranylcypromine had no effect on LNCaP-LN3 cells.

Reference: Oncol Rep. 2013 Oct;30(4):1587-92. https://pubmed.ncbi.nlm.nih.gov/23900512/

In vivo activity

SCID mice were injected subcutaneously with LNCap cells. Pargyline was given intraperitoneally or not after castration (implemented with Bilateral orchidectomy), then PSA levels in serum and tumor were determined to assess time to androgen-independent progression. The results showed that LSD1 expression was up-regulated when PCa progressed to Castration Resistant Prostate Cancer (CRPC). Pargyline reduced LNCap cells migration and invasion ability, and inhibited the process of EMT by up-regulating expression of E-cadherin, and down-regulating expressions of N-cadherin and Vimentin in vitro and in vivo. Although, Pargyline did not change the level of AR, it reduced PSA expression both in vitro and in vivo. Furthermore, Pargyline delayed prostate cancer transition from androgen-dependent to androgen-independent state (CRPC).

Reference: Biochem Biophys Res Commun. 2015 Nov 13;467(2):310-5. https://pubmed.ncbi.nlm.nih.gov/26435505/

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.