# Pargyline hydrochloride

**Cat. No.:** HY-A0091

**CAS No.:** 306-07-0

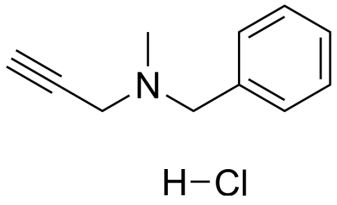
**Molecular Formula:** $C_{11}H_{14}ClN$

**Molecular Weight:** 195.69

**Target:** Monoamine Oxidase

**Pathway:** Neuronal Signaling

**Storage:** 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 125 mg/mL (638.77 mM; Need ultrasonic)
$H_2O$ : 100 mg/mL (511.01 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Concentration \ Solvent \ Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 5.1101 mL | 25.5506 mL | 51.1012 mL |
| 5 mM | 1.0220 mL | 5.1101 mL | 10.2202 mL |
| 10 mM | 0.5110 mL | 2.5551 mL | 5.1101 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: PBS
   Solubility: 25 mg/mL (127.75 mM); Clear solution; Need ultrasonic and warming
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (10.63 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (10.63 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (10.63 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Pargyline hydrochloride is an irreversible monoamine oxidase (MAO) inhibitor with $K_i$s of 13 μM and 0.5 μM for MAO-A and MAO-B, respectively. Pargyline hydrochloride has antihypertensive and anticancer activities[1][2][3]. Pargyline (hydrochloride) is a click chemistry reagent, it contains an Alkyne group and can undergo copper-catalyzed azide-alkyne cycloaddition (CuAAc) with molecules containing Azide groups.

| $IC_{50}$ & Target | MAO-B | MAO-A |
|---|---|---|

| | | |
|---|---|---|
| | 0.5 μM (Ki) | 13 μM (Ki) |

**In Vitro**

Pargyline (0.5-2 mM; 24-120 hours; LNCaP-LN3 cells) treatment inhibits the proliferation of prostate cancer cells in a time- and dose-dependent manner[2].
Pargyline (0.5-2 mM; 24-48 hours; LNCaP-LN3 cells) treatment decreases S phase and increases the G1 phase in the cells in a dose-dependent manner[2].
Pargyline (0.5 mM; 24 hours; LNCaP-LN3 cells) treatment increases the apoptotic cells[2].
Pargyline (2 mM; 48 hours; LNCaP-LN3 cells) treatment induces an increase of cytochrome c and a decrease of caspase-3 in the cells, but does not lead to a change of BCL-2 expression[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[2]

| | |
|---|---|
| Cell Line: | LNCaP-LN3 cells |
| Concentration: | 0.5 mM, 1 mM, 1.5 mM or 2 mM |
| Incubation Time: | 24 hours, 48 hours, 72 hours, 96 hours or 120 hours |
| Result: | Inhibited the proliferation of prostate cancer cells in a time- and dose-dependent manner. |

Cell Cycle Analysis[2]

| | |
|---|---|
| Cell Line: | LNCaP-LN3 cells |
| Concentration: | 0.5 mM, 2 mM |
| Incubation Time: | 24 hours, 48 hours |
| Result: | The S phase ratio of the cells was decreased, while their G1 phase ratio was increased. |

Apoptosis Analysis[2]

| | |
|---|---|
| Cell Line: | LNCaP-LN3 cells |
| Concentration: | 0.5 mM |
| Incubation Time: | 24 hours |
| Result: | Increased the apoptotic cells. |

Western Blot Analysis[2]

| | |
|---|---|
| Cell Line: | LNCaP-LN3 cells |
| Concentration: | 2 mM |
| Incubation Time: | 48 hours |
| Result: | Induced an increase of cytochrome c and a decrease of caspase-3. |

**In Vivo**

Pargyline (10 mg/kg; iv) treatment induces a moderate (about 20 mm Hg) but persistent (48 h) decrease of systolic blood pressure in unanesthetized adult spontaneously hypertensive rats (SHR) but not in normotensive rats[3].
A low dose of Pargyline (200 μg; icv) injected directly into the brain lowered arterial pressure. The hypotensive action of Pargylline in SHR appears to be the consequence of Norepinephrine accumulating at an inhibitory α-adrenoceptor in brain [3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Neural Regen Res. 2021;16:1660-70.
- J Parkinson Dis. 2020;10(2):523-542.

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## REFERENCES

[1]. C J Fowler, et al. The nature of the inhibition of rat liver monoamine oxidase types A and B by the acetylenic inhibitors clorgyline, l-deprenyl and pargyline. Biochem Pharmacol. 1982 Nov 15;31(22):3555-61.

[2]. Fuentes JA, et al. Central mediation of the antihypertensive effect of pargyline in spontaneously hypertensive rats. Eur J Pharmacol. 1979 Jul 15;57(1):21-7.

[3]. Hyung Tae Lee, et al. 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.



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