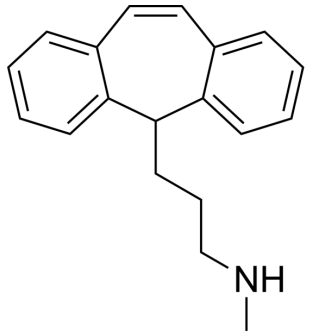
Protriptyline

Cat. No.:	HY-B0949A
CAS No.:	438-60-8
Molecular Formula:	$C_{19}H_{21}N$
Molecular Weight:	263.38
Target:	Cholinesterase (ChE); Amyloid-β
Pathway:	Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Protriptyline is a potent antidepressant agent. Protriptyline inhibits AChE activity with IC_{50} value of 0.06 mM and inhibits Aβ Self-Assembly. Protriptyline can be used for depression and Alzheimers disease[1][2][3].
IC_{50} & Target	AChE 0.06 mM (IC_{50})
In Vitro	Protriptyline (0-70 μM; 24 hours; PC3 cells) causes cytotoxicity in PC3 cells[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[2]

Cell Line:	PC3 cells
Concentration:	50, 60 and 70 μM
Incubation Time:	24 hours
Result:	Decreased cell viability in a concentration-dependent manner.

In Vivo

Protriptyline (10 mg/kg; i.p.; for 21 days; rat model of AD) improves spatial learning and retention memory in STZ treated rats[3].

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Animal Model:	Rat model of AD[3]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection; for 21 days.
Result:	Reduced pTau, Aβ42 and BACE-1 levels, neurodegeneration, oxidative stress and glial activation. Improved p-ERK/ERK ratio and enhanced BDNF and CREB levels by reducing NF κB and GFAP expression.

CUSTOMER VALIDATION

- Cell Commun Signal. 2023 May 25;21(1):123.
- Biochem Biophys Res Commun. 2022 Dec 31;637:181-188.
- Biochem Biophys Res Commun. 2022.

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REFERENCES

[1]. Bansode SB, et, al. Molecular investigations of protriptyline as a multi-target directed ligand in Alzheimer's disease. PLoS One. 2014 Aug 20;9(8):e105196.

[2]. Chang HT, et, al. The mechanism of protriptyline-induced Ca2+ movement and non-Ca2+-triggered cell death in PC3 human prostate cancer cells. J Recept Signal Transduct Res. 2015;35(5):429-34.

[3]. Tiwari V, et, al. Protriptyline improves spatial memory and reduces oxidative damage by regulating NFκB-BDNF/CREB signaling axis in streptozotocin-induced rat model of Alzheimer's disease. Brain Res. 2021 Mar 1;1754:147261.

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