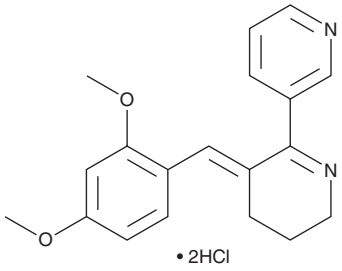
PRODUCT INFORMATION

GTS-21 (hydrochloride)

Item No. 21570

CAS Registry No.:	156223-05-1
Formal Name:	(3E)-3-[(2,4-dimethoxyphenyl) methylene]-3,4,5,6-tetrahydro-2,3'-bipyridine, dihydrochloride
Synonym:	DMXB-A
MF:	$C_{19}H_{20}N_2O_2$ • 2HCl
FW:	381.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 258, 406 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

GTS-21 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the GTS-21 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. GTS-21 (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of GTS-21 (hydrochloride) in ethanol and DMF is approximately 1 mg/ml and approximately 2 mg/ml in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of GTS-21 (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of GTS-21 (hydrochloride) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

GTS-21 is an agonist of α7-containing nicotinic acetylcholine receptors (nAChRs) that, at a concentration of 100 µM, activates human α7-containing nAChRs expressed in *Xenopus* oocytes to 60% of the levels generated by endogenous ligand acetylcholine.[1] It is selective for α7-containing nAChRs, having no activity at α2-, α3-, and α4-containing nAChRs at a concentration of 100 µM. GTS-21 stimulates dopamine release from rat striatal slices (EC_{50} = 10 µM).[2] *In vivo*, GTS-21 decreases delay in the delayed matching-to-sample task in monkeys. It also suppresses amnesia and neuronal cell death in a gerbil model of ischemia-reperfusion injury.[3]

References

1. Meyer, E.M., Tay, E.T., Papke, R.L., *et al.* 3-[2,4-Dimethoxybenzylidene]anabaseine (DMXB) selectively activates rat α7 receptors and improves memory-related behaviors in a mecamylamine-sensitive manner. *Brain Res.* **768(1-2)**, 49-56 (1997).
2. Briggs, C.A., Anderson, D.J., Brioni, J.D., *et al.* Functional characterization of the novel neuronal nicotinic acetylcholine receptor ligand GTS-21 in vitro and in vivo. *Pharmacol. Biochem. Behav.* **57(1-2)**, 231-241 (1997).
3. Nanri, M., Yamamoto, J., Miyake, H., *et al.* Protective effect of GTS-21, a novel nicotinic receptor agonist, on delayed neuronal death induced by ischemia in gerbils. *Jpn. J. Pharmacol.* **76(1)**, 23-29 (1998).

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