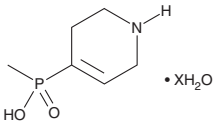
PRODUCT INFORMATION

TPMPA (hydrate)

Item No. 24302

CAS Registry No.: 182485-36-5
Formal Name: P-methyl-P-(1,2,3,6-tetrahydro-4-pyridinyl)-phosphinic acid, hydrate
MF: $C_6H_{12}NO_2P$
FW: 161.1
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

TPMPA (hydrate) is supplied as a crystalline solid. Aqueous solutions of TPMPA (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of TPMPA (hydrate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

TPMPA is a $GABA_A$-ρ1 (ρ1 $GABA_C$) receptor antagonist that is 8-fold selective for $GABA_A$-ρ1 over $GABA_A$-ρ2 (ρ2 $GABA_C$) receptors expressed in *X. laevis* oocytes (K_bs = 2 and 16 µM, respectively).[1] In rat hippocampal slices, TPMPA blocks the inhibitory effect of the $GABA_B$ agonist 3-APMPA on excitatory postsynaptic currents (EPSCs) with an EC_{50} value of 490 µM.[2] TPMPA (100 µM) increases light sensitivity and the maximal response of rat retinal ganglion cells without altering their dynamic range.[3] In sleeping rats, TPMPA (50 µg, i.c.v.) increases waking from 45 to 62% compared to a vehicle control and decreases slow-wave and paradoxical sleep (REM) by 11 and 5.4%, respectively.[4]

References

1. Chebib, M., Mewett, K.N., and Johnston, G.A. $GABA_C$ receptor antagonists differentiate between human ρ1 and ρ2 receptors expressed in *Xenopus* oocytes. *Eur. J. Pharmacol.* **357(2-3)**, 227-234 (1998).
2. Ragozzino, D., Woodward, R.M., Murata, Y., *et al.* Design and in vitro pharmacology of a selective γ-aminobutyric $acid_C$ receptor antagonist. *Mol. Pharmacol.* **50(4)**, 1024-1030 (1996).
3. Jensen, R.J. Blocking $GABA_C$ receptors increases light responsiveness of retinal ganglion cells in a rat model of retinitis pigmentosa. *Exp. Eye Res.* **105**, 21-26 (2012).
4. Arnaud, C., Gauthier, P., and Gottesmann, C. Study of a $GABA_C$ receptor antagonist on sleep-waking behavior in rats. *Psychopharmacology (Berl)* **154(4)**, 415-419 (2001).

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