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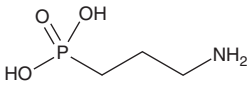
PRODUCT INFORMATION

3-Aminopropylphosphonic Acid

Item No. 23556

CAS Registry No.: 13138-33-5
Formal Name: P-(3-aminopropyl)-phosphonic acid
Synonyms: β-Aminopropylphosphonic Acid, 3-APPA, NSC 133832
MF: $C_3H_{10}NO_3P$
FW: 139.1
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

3-Aminopropylphosphonic acid (3-APPA) is supplied as a crystalline solid. A stock solution may be made by dissolving the 3-APPA in the solvent of choice. 3-APPA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of 3-APPA in these solvents is approximately 30, 2, and 5 mg/ml, respectively.

3-APPA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 3-APPA should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 3-APPA has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

3-APPA is a phosphonic analog of GABA that acts as a partial agonist of $GABA_B$ receptors (IC_{50} = 1.5 µM in a radioligand binding assay).[1,2] It induces relaxation in unstimulated isolated guinea pig ileum longitudinal muscle and reverses GABA- and baclofen-induced inhibition of twitch responses in isolated guinea pig ileum longitudinal muscle.[2] 3-APPA (5 mg/kg) completely inhibits GABA- and baclofen-induced inhibition of vagally stimulated bronchospasms in guinea pigs.[3] It also reverses the antitussive effect of baclofen in cats when administered at a dose of 3 mg/kg.[4]

References

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3. Chapman, R.W., Danko, G., Rizzo, C., *et al*. Prejunctional GABA-B inhibition of cholinergic, neurally-mediated airway contractions in guinea-pigs. *Pulm. Pharmacol.* **4(4)**, 218-224 (1991).
4. Bolser, D.C., Aziz, S.M., DeGennaro, F.C., *et al*. Antitussive effects of $GABA_B$ agonists in the cat and guinea-pig. *Br. J. Pharmacol.* **110(1)**, 491-495 (1993).

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