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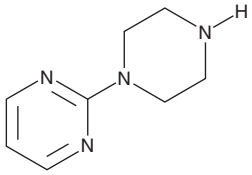
PRODUCT INFORMATION

2-(1-Piperazinyl)pyrimidine

Item No. 34091

CAS Registry No.: 20980-22-7
Synonyms: PmP, 1-PP, 1-(2-Pyrimidyl)piperazine
MF: $C_8H_{12}N_4$
FW: 164.2
Purity: ≥98%
UV/Vis.: λ_{max}: 247 nm
Supplied as: A 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

2-(1-Piperazinyl)pyrimidine is supplied as a solid. A stock solution may be made by dissolving the 2-(1-piperazinyl)pyrimidine in the solvent of choice, which should be purged with an inert gas. 2-(1-Piperazinyl)pyrimidine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 2-(1-piperazinyl)pyrimidine in these solvents is approximately 10 mg/ml.

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 2-(1-piperazinyl)pyrimidine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 2-(1-piperazinyl)pyrimidine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

2-(1-Piperazinyl)pyrimidine is an antagonist of α_2-adrenergic receptors (α_2-ARs; pA_2 = 6.8 in rat brain synaptosomes) and active metabolite of various azapirones, including buspirone.[1-4] It is formed from buspirone by the cytochrome P450 (CYP) isoform CYP3A4 in human liver microsomes.[5] 2-(1-Piperazinyl)pyrimidine inhibits decreases in gastrointestinal transit induced by clonidine (Item No. 15949) in rats (ED_{50} = 0.8 mg/kg).[2] It increases drinking in the Vogel punished drinking task, indicating anxiolytic-like activity, in rats when administered at doses ranging from 1 to 4 mg/kg.[3] 2-(1-Piperazinyl)pyrimidine (0.25-1 mg/kg) also reduces the amplitude of electrically stimulated excitatory post-synaptic potentials (EPSPs) in the hippocampal CA1 region in rats, an effect that can be blocked by the serotonin (5-HT) receptor subtype 5-HT_{1A} antagonist spiroxatrine.[4] It has also been used a phosphopeptide derivatization agent.[6]

References

1. Gobbi, M., Frittoli, E., and Mennini, T. *Eur. J. Pharmacol.* **180(1)**, 183-186 (1990).
2. Bianchi, G., Caccia, S., Della Vedova, F., *et al. Eur. J. Pharmacol.* **151(3)**, 365-371 (1988).
3. Gower, A.J. and Tricklebank, M.D. *Eur. J. Pharmacol.* **155(1-2)**, 129-37 (1988).
4 Manahan-Vaughan, D., Anwyl, R., and Rowan, M.J. *Eur. J. Pharmacol.* **294(2-3)**, 617-624 (1995).
5. Zhu, M., Zhao, W., Jimenez, H., *et al. Drug Metab. Dispos.* **33(4)**, 500-507 (2005).
6. Zhang, L., Xu, Y., Lu, H., *et al. Proteomics* **9(16)**, 4093-4097 (2009).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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