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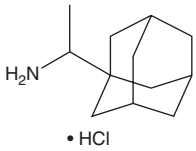
PRODUCT INFORMATION

Rimantadine (hydrochloride)

Item No. 23838

CAS Registry No.: 1501-84-4
Formal Name: α-methyl-tricyclo[3.3.1.1^{3,7}]decane-1-methanamine, monohydrochloride
Synonyms: 1-(1-Adamantyl)ethylamine Hydrochloride, NSC 206764
MF: $C_{12}H_{21}N$ • HCl
FW: 215.8
Purity: ≥98%
UV/Vis.: λ_{max}: 202 nm
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

Rimantadine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the rimantadine (hydrochloride) in the solvent of choice. Rimantadine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of rimantadine (hydrochloride) in these solvents is approximately 5, 50, and 2 mg/ml, respectively.

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 rimantadine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of rimantadine (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Rimantadine is a derivative of amantadine (Item No. 21364) with antiviral activity.[1] It inhibits recombinant influenza A matrix protein 2 (M2) expressed in *X. laevis* oocytes (IC_{50} = 10.8 µM) and recombinant hepatitis C virus (HCV) p7 protein expressed in HEK293 cells (IC_{50}s = 0.7, 24, 1.6, and 3.0 nM for HCV genotypes 1a, 2a, 3a, and 4a, respectively).[2,3] Rimantadine inhibits cytotoxicity induced by the influenza A strains A/PR/8/34 (H1N1) and A/HK/7/87 (H3N2), but not the influenza B strain B/HK/72, in MDCK cells (EC_{50}s = 18, 0.62, and >500 µM, respectively).[4] It increases the survival rate of mice infected with the influenza A strain A2/Jap/305 from 20 to 90% when administered at a dose of 24 mg/kg two hours post-infection, with the survival rate decreasing when rimantadine is administered at longer timepoints following infection.[5] It also has trypanocidal activity against bloodstream forms of *T. brucei in vitro* (IC_{50} = 1.26 µg/ml).[6] Formulations containing rimantadine have been used in the prophylaxis and treatment of influenza A.

References

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3. Breitinger, U., Farag, N.S., Ali, N.K.M., *et al. Biophys J.* **110(11)**, 2419-2429 (2016).
4. Rey-Carrizo, M., Torres, E., Ma, C., *et al. J. Med. Chem.* **56(22)**, 9265-9274 (2013).
5. Rabinovich, S. *Antimicrob. Agents Chemother.* **1(5)**, 408-411 (1972).
6. Kelly, J.M., Miles, M.A., and Skinner, A.C. *Antimicrob. Agents Chemother.* **43(4)**, 985-987 (1999).

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