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ProductInformation

Amantadine hydrochloride

Product Number **A 1260**
Store at Room Temperature

Replacement for Product Number 11,519-3

Product Description

Molecular Formula: $C_{10}H_{17}N \bullet HCl$
Molecular Weight: 187.7
CAS Number: 665-66-7
Melting Point: 360 °C (with decomposition)[1]
Synonyms: tricyclo[3.3.1.1^{3,7}]decan-1-amine; 1-adanmantanamine; 1-aminoadamantane

Amantadine, the 1-amino derivative of adamantane, is a compound used in ion channel research. It has antiviral properties, notably against influenza type A virus.[1,2] Amantadine specifically targets proton-selective ion channels in influenza A, such as the M2 channel.[3,4] It has been shown to inhibit both potassium conductance in the potassium channel protein Kcv from the chlorella virus PBCV-1 and virus plaque formation when tested in *Xenopus laevis* oocytes.[5] Amantadine has been shown to inactivate the calcium ion channel function of the p7 protein of hepatitis C virus.[6]

Amantadine is also utilized in research on Parkinsonism. It has been used in conjunction with L-Dopa to probe restoration of motor function in MPTP-treated mice, an *in vivo* model for Parkinsonism.[7] Amantadine has also been utilized in 6-hydroxydopamine-lesioned rats, a rat model of Parkinsonism, to investigate akinesia and dyskinesia.[8]

A review of analytical methodology for amantadine has been published.[9]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (50 mg/ml), with heat as needed, yielding a slightly hazy, colorless solution.

References

1. The Merck Index, 12th ed., Entry# 389.
2. Martindale The Extra Pharmacopoeia, 31st ed., Reynolds, J. E. F., ed., Royal Pharmaceutical Society (London, UK: 1996), pp. 1152-1154.
3. Lear, J. D., Proton conduction through the M2 protein of the influenza A virus; a quantitative, mechanistic analysis of experimental data. FEBS Lett., **552(1)**, 17-22 (2003).
4. Oxford, J. S., et al., Treatment of epidemic and pandemic influenza with neuraminidase and M2 proton channel inhibitors. Clin. Microbiol. Infect., **9(1)**, 1-14 (2003).
5. Plugge, B., et al., A potassium channel protein encoded by chlorella virus PBCV-1. Science, **287(5458)**, 1641-1644 (2000).
6. Griffin, S. D., et al., The p7 protein of hepatitis C virus forms an ion channel that is blocked by the antiviral drug, Amantadine. FEBS Lett., **535(1-3)**, 34-38 (2003).
7. Fredriksson, A., et al., Related Articles, Co administration of memantine and amantadine with sub/suprathreshold doses of L-Dopa restores motor behaviour of MPTP-treated mice. J. Neural. Transm., **108(2)**, 167-187 (2001).
8. Lundblad, M., et al., Pharmacological validation of behavioural measures of akinesia and dyskinesia in a rat model of Parkinson's disease. Eur. J. Neurosci., **15(1)**, 120-132 (2002).
9. Suckow, R. F., Separation methods for tricyclic antiviral drugs. J. Chromatogr. B Biomed. Sci. Appl., **764(1-2)**, 313-325 (2001).

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