



Product Information

Aconitine

Product Number **A8001**
Store at Room Temperature

Product Description

Molecular Formula: $C_{34}H_{47}NO_{11}$
Molecular Weight: 645.7
CAS Number: 302-27-2
Melting Point: 204 °C¹
Specific Rotation: +17.3° (chloroform)¹
Synonym: (1 α ,3 α ,6 α ,14 α ,15 α ,16 β)-20-ethyl-1,6,16-trimethoxy-4-(methoxymethyl)aconitane-3,8,13,14,15-pentol 8-acetate 14-benzoate¹

Aconitine is an alkaloid with a diterpenoid structure that occurs naturally in the roots of *Aconitum napellus* (*Ranunculaceae*), or the monkshood plant.¹ Being the principal alkaloid in the *A. napellus* root, aconitine has been studied for its pharmacological properties.² One mechanism of action is suppression of the inactivation of voltage-dependent Na⁺ channels via the binding to neurotoxin binding site 2 of the α -subunit of the channel protein.³ A review of the use of aconitine and other compounds to target voltage-gated sodium channels has been published.⁴

The interaction of aconitine (10-100 nM) and 6-benzoylheteratisine (3 μ M) in the rat hippocampus has been studied.⁵ The effect of aconitine on the expression of MHC class II in macrophages has been investigated.⁶ Aconitine (1 μ M) has been shown to suppress both normal and epileptiform activity in rat hippocampal slices as an anticonvulsive agent.⁷

HPLC/SPE/MS and capillary LC/FAB-MS methods for the analysis of aconitine from biological samples have been published.^{8,9}

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in chloroform (50 mg/ml), yielding a clear, colorless to light yellow solution. Its solubility in chloroform has been reported to be 500 mg/ml. It is also soluble in absolute alcohol (35 mg/ml), and ether (20 mg/ml).¹

References

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3. Ameri, A., The effects of *Aconitum* alkaloids on the central nervous system. *Prog. Neurobiol.*, **56(2)**, 211-235 (1998).
4. Wang, S. Y., and Wang, G. K., Voltage-gated sodium channels as primary targets of diverse lipid-soluble neurotoxins. *Cell. Signal.*, **15(2)**, 151-159 (2003).
5. Ameri, A., and Simmet, T., Interaction of the structurally related aconitum alkaloids, aconitine and 6-benzoylheteratisine, in the rat hippocampus. *Eur. J. Pharmacol.*, **386(2-3)**, 187-194 (1999).
6. Kimura, I., et al., Expression of major histocompatibility complex in mouse peritoneal macrophages increasingly depends on plasma corticosterone levels: stimulation by aconitine. *Biol. Pharm. Bull.*, **18(11)**, 1504-1508 (1995).
7. Ameri, A., et al., Bicuculline-induced epileptiform activity in rat hippocampal slices: suppression by *Aconitum* alkaloids. *Planta Med.*, **63(3)**, 228-232 (1997).

8. Ohta, H., et al., Determination of *Aconitum* alkaloids in blood and urine samples. I. High-performance liquid chromatographic separation, solid-phase extraction and mass spectrometric confirmation. J. Chromatogr. B Biomed. Sci. Appl., **691(2)**, 351-356 (1997).
9. Ohta, H., et al., Determination of *Aconitum* alkaloids in blood and urine samples. II. Capillary liquid chromatographic-frit fast atom bombardment mass spectrometric analysis. J. Chromatogr. B Biomed. Sci. Appl., **714(2)**, 215-221 (1998).

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