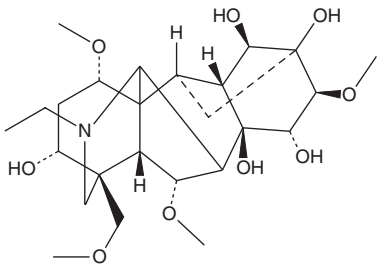
PRODUCT INFORMATION

Aconine

Item No. 25048

CAS Registry No.: 509-20-6
Formal Name: (1α,3α,6α,14α,15α,16β)-20-ethyl-1,6,16-trimethoxy-4-(methoxymethyl)-aconitane-3,8,13,14,15-pentol
MF: $C_{25}H_{41}NO_9$
FW: 499.6
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Aconine is supplied as a crystalline solid. A stock solution may be made by dissolving the aconine in the solvent of choice. Aconine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of aconine in ethanol and DMF is approximately 25 mg/ml and approximately 20 mg/ml in DMSO.

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 aconine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of aconine in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Aconine is an alkaloid originally isolated from *Aconitum* species and active metabolite of aconitine.[1] It inhibits osteoclast differentiation of RANKL-stimulated RAW 264.7 cells and bone resorption in a pit formation assay in a concentration-dependent manner.[2] Aconine also inhibits RANKL-induced activation of NF-κB and NFATc1 in RAW 264.7 cells. *In vivo*, aconine is toxic to mice when administered intravenously at a dose of 120 mg/kg.[1] It induces flaccid paralysis and toxicity in rats with toxic dose (TD_{50}) and LD_{50} values of 1.5 and 1.7 µmol per animal, respectively.[3]

References

1. Wada, K., Nihira, M., and Ohno, Y. Effects of chronic administrations of aconitine on body weight and rectal temperature in mice. *J. Ethnopharmacol.* **105(1-2)**, 89-94 (2006).
2. Zeng, X.-Z., He, L.-G., Wang, S., *et al.* Aconine inhibits RANKL-induced osteoclast differentiation in RAW264.7 cells by suppressing NF-κB and NFATc1 activation and DC-STAMP expression. *Acta. Pharmacol. Sin.* **37(2)**, 255-263 (2016).
3. Li, T.-F., Gong, N., and Wang, Y.-X. Ester hydrolysis differentially reduces aconitine-induced anti-hypersensitivity and acute neurotoxicity: Involvement of spinal microglial dynorphin expression and implications for aconitum processing. *Front. Pharmacol.* **7:367** (2016).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM