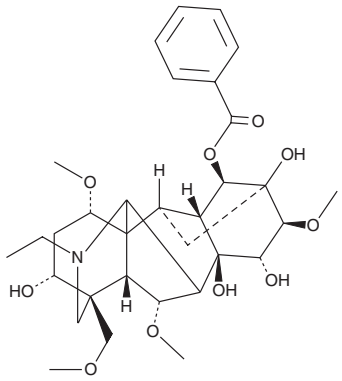
PRODUCT INFORMATION

Benzoylaconine

Item No. 25687



CAS Registry No.:	466-24-0
Formal Name:	(1α,3α,6α,14α,15α,16β)-20-ethyl-1,6,16-trimethoxy-4-(methoxymethyl)-aconitane-3,8,13,14,15-pentol, 14-benzoate
MF:	$C_{32}H_{45}NO_{10}$
FW:	603.7
Purity:	≥95%
UV/Vis.:	λ_{max}: 229 nm
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

Benzoylaconine is supplied as a crystalline solid. A stock solution may be made by dissolving the benzoylaconine in the solvent of choice. Benzoylaconine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of benzoylaconine in ethanol and DMF is approximately 25 mg/ml and approxinately 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 benzoylaconine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of benzoylaconine in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Benzoylaconine is an aconitine-type diterpenoid alkaloid that has been found in *Aconitum* species.[1,2] Benzoylaconine increases protein levels of the efflux transporters P-glycoprotein, multidrug resistance-associated protein 2 (MRP2), and breast cancer resistance protein (BCRP) in LS174T cells in a concentration-dependent manner.[2,3] It also increases the protein levels of P-glycoprotein in Caco-2 cells and the pregnane X receptor (PXR) in both Caco-2 and LS174T cells when used at a concentration of 50 µM.[3] Benzoylaconine (50 µM) reduces the cytotoxic effects of the P-glycoprotein substrates vincristine (Item No. 11764) and doxorubicin (Item No. 15007) in Caco-2 cells. *In vivo*, benzoylaconine (0.6 mg/kg) increases protein levels of Nrf2, MRP2, and BCRP in the jejunum, ileum, and colon in mice.[2] It also increases survival of mice injected with a lethal dose of the neurotoxin aconitine (ED_{50} = 15 mg/kg, i.p.).[1]

References

1. Tursunkhodzhaeva, F.M., Dzhakhangirov, F.N., and Salimov, B.T. Diterpenoid alkaloids as antidotes to aconitine-type neurotoxin poisoning. Structure–activity relationship. *Chem. Nat. Compd.* **52(5)**, 849-852 (2016).
2. Wu, J.-J., Zhu, Y.-F., Guo, Z.-Z., *et al.* Aconitum alkaloids, the major components of *Aconitum* species, affect expression of multidrug resistance-associated protein 2 and breast cancer resistance protein by activating the Nrf2-mediated signalling pathway. *Phytomedicine* **44**, 87-97 (2018).
3. Wu, J., Lin, N., Li, F., *et al.* Induction of P-glycoprotein expression and activity by *Aconitum* alkaloids: Implication for clinical drug-drug interactions. *Sci. Rep.* **6:25343** (2016).

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