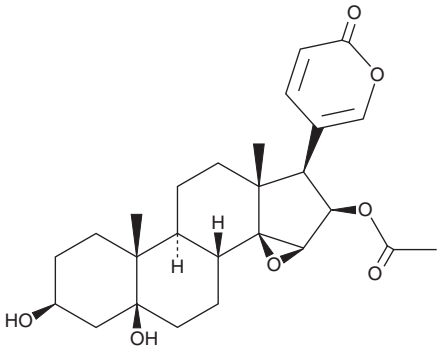
PRODUCT INFORMATION

Cinobufotalin

Item No. 19845

CAS Registry No.:	1108-68-5
Formal Name:	16β-(acetyloxy)-14,15β-epoxy-3β,5β-dihydroxy-bufa-20,22-dienolide
Synonym:	NSC 90326
MF:	$C_{26}H_{34}O_7$
FW:	458.6
Purity:	≥98%
UV/Vis.:	λ_{max}: 296 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

Cinobufotalin is supplied as a crystalline solid. A stock solution may be made by dissolving the cinobufotalin in the solvent of choice, which should be purged with an inert gas. Cinobufotalin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of cinobufotalin in ethanol and DMSO is approximately 5 mg/ml and approximately 10 mg/ml in DMF.

Cinobufotalin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, cinobufotalin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Cinobufotalin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Cinobufotalin is a steroid glycoside originally isolated from the Asiatic toad (*B. gargarizans*) and has diverse biological activities.[1,2] It reduces SRC-3 protein levels in MCF-7 breast cancer cells when used at concentrations ranging from 10 to 100 nM.[1] Cinobufotalin (1 µM) reduces Na^+/K^+ pump activity, viability, and cell attachment of C7-MDCK cells.[2] It reduces expression of the epithelial-mesenchymal (EMT) markers E-cadherin, vimentin, ZEB1, and Slug in and migration and invasion of PC3 cells.[3] Cinobufotalin (0.1-10 µM) is cytotoxic to A549, H460, and HTB-58 lung cancer cells.[4] *In vivo*, cinobufotalin (1 and 5 mg/kg) reduces tumor volume and increases survival in an A549 mouse xenograft model.

References

1. Wang, Y., Lonard, D.M., Yu, Y., *et al.* Bufalin is a potent small-molecule inhibitor of the steroid receptor coactivators SRC-3 and SRC-1. *Cancer Res.* **74(5)**, 1506-1517 (2014).
2. Akimova, O.A., Bagrov, A.Y., Lopina, O.D., *et al.* Cardiotonic steroids differentially affect intracellular Na^+ and $[Na^+]_i/[K^+]_i$-independent signaling in C7-MDCK cells. *J. Biol. Chem.* **280(1)**, 832-839 (2005).
3. Chen, L., Mai, W., Chen, M., *et al.* Arenobufagin inhibits prostate cancer epithelial-mesenchymal transition and metastasis by down-regulating β-catenin. *Pharmacol. Res.* **123**, 130-142 (2017).
4. Kai, S., Lu, J.-H., Hui, P.-P., *et al.* Pre-clinical evaluation of cinobufotalin as a potential anti-lung cancer agent. *Biochem. Biophys. Res. Commun.* **452(3)**, 768-774 (2014).

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