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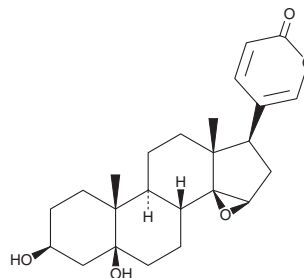
PRODUCT INFORMATION



Marinobufagenin

Item No. 20798

CAS Registry No.: 470-42-8
Formal Name: (3 β ,5 β ,15 β)-14,15-epoxy-3,5-dihydroxy-bufa-20,22-dienolide
Synonyms: Marinobufagin, MBG, NSC 234205
MF: C₂₄H₃₂O₅
FW: 400.5
Purity: \geq 98%
UV/Vis.: λ_{max} : 297 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

Marinobufagenin is supplied as a crystalline solid. A stock solution may be made by dissolving the marinobufagenin in the solvent of choice. Marinobufagenin is soluble in organic solvents such as ethanol and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of marinobufagenin in these solvents is approximately 1 and 3 mg/ml, respectively.

Marinobufagenin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, marinobufagenin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Marinobufagenin has a solubility of approximately 0.1 mg/ml in a 1:8 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Marinobufagenin (MBG) is a bufadienolide steroid first isolated from toads of genus *Bufo*. It can also be excreted by mammalian cells, particularly kidney cells from hypertensive animals.¹ MBG inhibits the ouabain-resistant α_1 Na⁺/K⁺ ATPase subunit (IC₅₀ = 78 nM), impairing a major sodium pump of the kidneys, resulting in natriuresis and arterial hypertension.^{1,2} Serum and urine levels of MBG are also elevated after cardiac infarction, and a reduced form of MBG, marinobufotoxin, occurs in the plasma of patients with terminal renal failure.^{2,3} Through its effects on the α_1 Na⁺/K⁺ ATPase subunit, MBG has profound immediate and prolonged effects on kidney, heart, and vascular functions.²

References

1. Fedorova, O.V., Kolodkin, N.I., Agalakova, N.I., *et al.* Marinobufagenin, an endogenous alpha-1 sodium pump ligand, in hypertensive Dahl salt-sensitive rats. *Hypertension* **37(2 Pt 2)**, 462-466 (2001).
2. Schoner, W. and Scheiner-Bobis, G. Role of endogenous cardiotonic steroids in sodium homeostasis. *Nephrol. Dial. Transplant.* **23(9)**, 2723-2729 (2008).
3. Schoner, W. Endogenous cardiac glycosides, a new class of steroid hormones. *Eur. J. Biochem.* **269(10)**, 2440-2448 (2002).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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