

PRODUCT INFORMATION



Ouabain-d₃ Item No. 40168

Formal Name: 4-((1R,3S,5S,8R,9S,10R,11R,13R,14S,17R)-1,5,11,14-tetrahydroxy-10-(hydroxymethyl)-13-methyl-3-(((2R,3R,4R,5R,6S)-3,4,5-trihydroxy-6-methyltetrahydro-2H-pyran-2-yl)oxy)hexadecahydro-1H-cyclopenta[a]phenanthren-17-yl)furan-2(5H)-one-3,5,5-d₃

Synonym: g-Strophanthin-d₃

MF: C₂₉H₄₁D₃O₁₂

FW: 587.7

Chemical Purity: ≥95% (Ouabain)

Deuterium

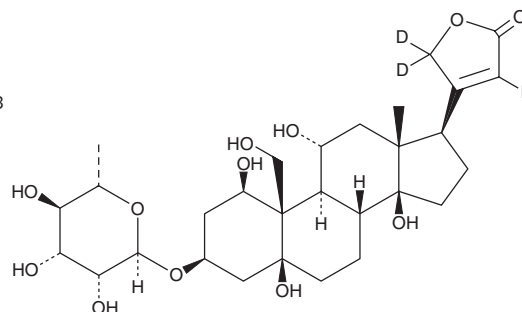
Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀

Supplied as: A solid

Storage: -20°C

Stability: ≥4 years

Item Origin: Synthetic



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

Laboratory Procedures

Ouabain-d₃ is intended for use as an internal standard for the quantification of ouabain by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Ouabain-d₃ is supplied as a solid. A stock solution may be made by dissolving the ouabain-d₃ in the solvent of choice, which should be purged with an inert gas. Ouabain-d₃ is slightly soluble in methanol.

Description

Ouabain is a cardiac glycoside that has been found in *S. gratus* and has diverse biological activities.¹⁻⁷ It inhibits the Na⁺/K⁺-ATPase isoforms α1β1 and α2β1 and human-ether-a-go-go (hERG), also known as K_v11.1 (IC₅₀s = 97, 90, and 15.2 nM, respectively).^{2,3} Ouabain reduces the proliferation of PC3 prostate cancer and U937 lymphoma cells (EC₅₀s = 210 and 94 nM, respectively).⁴ It inhibits the cytopathic effect of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in infected Vero cells (IC₅₀ = <0.097 μM).⁵ Ouabain (~8 μg/animal) increases systolic blood pressure in normotensive rats.⁶ It has been used to induce ventricular arrhythmias *in vivo*.⁷ Formulations containing ouabain have been used in the treatment of atrial fibrillation, atrial flutter, and heart failure.

References

1. Jacobs, W.A. and Bigelow, N.M. Ouabain or g-strophanthin. *J. Biol. Chem.* **96**(3), 647-658 (1932).
2. Katz, A., Tal, D.M., Heller, D., et al. *J. Biol. Chem.* **289**(30), 21153-21162 (2014).
3. Wang, L., Wible, B.A., Wan, X., et al. *J. Pharmacol. Exp. Ther.* **320**(2), 525-534 (2007).
4. Bloise, E., Braca, A., De Tommasi, N., et al. *Cancer Chemother. Pharmacol.* **64**(4), 793-802 (2009).
5. Xavier, F.E., Rossoni, L.V., Alonso, M.J., et al. *Br. J. Pharmacol.* **143**(1), 215-225 (2004).
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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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