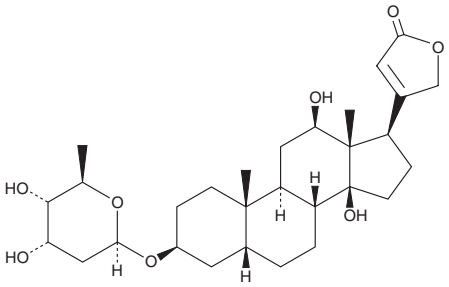
PRODUCT INFORMATION

Digoxigenin Monodigitoxoside

Item No. 21699



CAS Registry No.: 5352-63-6
Formal Name: (3β,5β,12β)-3-[(2,6-dideoxy-β-D-ribo-hexopyranosyl)oxy]-12,14-dihydroxy-card-20(22)-enolide
MF: $C_{29}H_{44}O_8$
FW: 520.7
Purity: ≥97%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Hygroscopic

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

Laboratory Procedures

Digoxigenin monodigitoxoside is supplied as a solid. A stock solution may be made by dissolving the digoxigenin monodigitoxoside in the solvent of choice, which should be purged with an inert gas. Digoxigenin monodigitoxoside is slightly soluble in DMSO and methanol.

Description

Digoxigenin monodigitoxoside is a Na^+/K^+-ATPase inhibitor and cardiac glycoside metabolite of digoxin (Item No. 22266).[1] It has a binding affinity of 0.829 and an inhibitory potency of 1.07 relative to [^{3}H]ouabain in a competitive binding assay using purified lamb Na^+/K^+-ATPase and for its ATPase activity, respectively.[2] Digoxigenin monodigitoxoside is selective for the $\alpha_3\beta_1$ isoform over $\alpha_1\beta_1$ and $\alpha_2\beta_1$ (K_ds = 31.8, 65, and 35 nM, respectively).[3] Digoxigenin monodigitoxoside produces a more potent inotropic response in perfused guinea pig hearts than digoxin with 60 and 46% increases in inotropy, respectively.[1]

References

1. Stephen, P.M., Dutta, S., and Marks, B.H. The uptake and subcellular distribution of radio-labeled metabolites of digoxin in the isolated perfused guinea-pig heart. *Naunyn Schmiedebergs Arch. Pharmacol.* **292(3)**, 251-254 (1976).
2. Paula, S., Tabet, M.R., and Ball, W.J., Jr. Interactions between cardiac glycosides and sodium/potassium-ATPase: Three-dimensional structure-activity relationship models for ligand binding to the E2-Pi form of the enzyme versus activity inhibition. *Biochemistry* **44(2)**, 498-510 (2005).
3. Katz, A., Lifshitz, Y., Bab-Dinitz, E., *et al.* Selectivity of digitalis glycosides for isoforms of human Na,K-ATPase. *J. Biol. Chem.* **285(25)**, 19582-19592 (2010).

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