Digoxin
Item No. 22266

CAS Registry No.: 20830-75-5
Formal Name: (3β,5β,12β)-3-[(O-2,6-dideoxy-β-D-ribo-
hexopyranosyl-(1→4)-O-2,6-dideoxy-
β-D-ribo-hexopyranosyl-(1→4)-2,6-
dideoxy-β-D-ribo-hexopyranosyl)oxy]-
12,14-dihydroxy-card-20(22)-enolide
Synonym: NSC 95100
MF: C_{41}H_{64}O_{14}
FW: 780.9
Purity: ≥ 98%
UV/Vis.: λ_{max}: 218 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥ 2 years

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

**Laboratory Procedures**

Digoxin is supplied as a crystalline solid. A stock solution may be made by dissolving the digoxin in the solvent of choice. Digoxin is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of digoxin in these solvents is approximately 30 mg/ml.

**Description**

Digoxin is a cardiac glycoside that binds to and inhibits the Na\(^+\)/K\(^+\)-ATPase in cardiac tissues in an ATP- and Mg\(^{2+}\)-dependent manner. This inhibition results in loss of the transmembrane Na\(^+\) gradient, which decreases activity of the Na\(^+\)/Ca\(^{2+}\) exchanger, increasing intracellular Ca\(^{2+}\) levels, inotropy, and cardiac force. It increases activity of mitochondrial ATPase and actomyosin ATPase in rat hearts, which is directly correlated with increased myofibrillar contractile strength. In vivo, digoxin also decreases right atrial pressure and increases cardiac output in a canine model of congestive heart failure produced by pulmonary artery constriction. Formulations containing digoxin have been used to treat atrial fibrillation.

**References**