

# Ouabain (Octahydrate)

Catalog No: tcsc2642



## Available Sizes

Size: 100mg



## Specifications

### CAS No:

11018-89-6

### Formula:

$C_{29}H_{60}O_{20}$

### Pathway:

Membrane Transporter/Ion Channel;Autophagy

### Target:

Na<sup>+</sup>/K<sup>+</sup> ATPase;Autophagy

### Purity / Grade:

>98%

### Solubility:

DMSO : ≥ 35 mg/mL (48.03 mM)

### Alternative Names:

Acocantherine;G-Strophanthin

### Observed Molecular Weight:

728.77

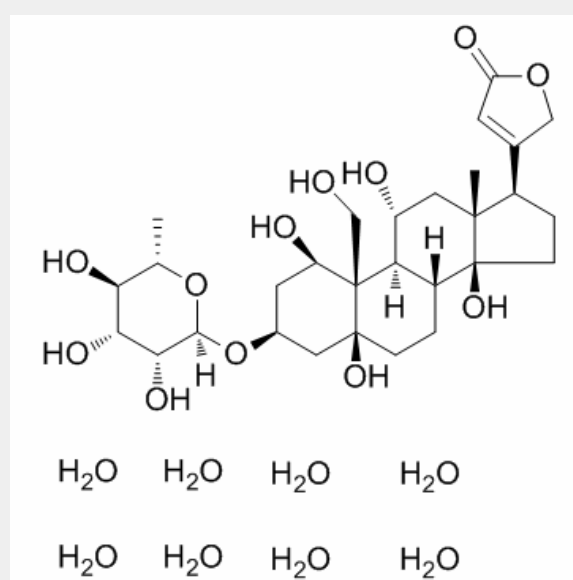
## Product Description

Ouabain Octahydrate is an inhibitor of **Na<sup>+</sup>/K<sup>+</sup>-ATPase**, used for the treatment of congestive heart failure.

**In Vitro:** Ouabain (100 μM) induces NLRP3 inflammasome activation and IL-1β release in macrophages. Ouabain-induced NLRP3 inflammasome activation is mediated through K<sup>+</sup> efflux<sup>[1]</sup>. Ouabain (3 nM) alters the expression of EMT markers in NHK and ADPKD cells, and modifies cell-cell adhesion properties in ADPKD. Moreover, ouabain enhances migration of ADPKD cells, selectively

modulates tight junctions, and modulates adherens junctions in ADPKD cells in a selective manner. Ouabain also activates TGF $\beta$ -Smad3 signaling, alters TER in ADPKD cells<sup>[2]</sup>. Ouabain (25, 50 or 100 nM) treatment significantly reduces cell proliferation and viability in Raji cells in a dose-dependent manner, with IC<sub>50</sub> of 76.48 $\pm$ 4.03 nM. Ouabain increases the number of apoptotic cells, induces autophagy, and upregulates Beclin-1 in Raji cells<sup>[4]</sup>.

***In Vivo:*** Ouabain (3 mg/kg) significantly decreases cardiac contractile force with an enlarged LVESD when mice are primed with LPS. IL-1 $\beta$  deficiency attenuates ouabain-induced cardiac dysfunction and injury. IL-1 $\beta$  secreted by infiltrated macrophages contributes to ouabain-induced cardiac inflammation. Deficiency of NLRP3 and Casp1 attenuates ouabain-induced cardiac dysfunction and macrophage infiltration<sup>[1]</sup>. Ouabain (30  $\mu$ g/kg, i.p.) modulates ABCB1 activity in thymocytes of Wistar rats and it has the same effect on Swiss mice at 300  $\mu$ g/kg. After 14 days of ouabain treatment, the MAP of rats is significantly elevated<sup>[3]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!