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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+/K+ 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^+/K^+-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^+ efflux[1]. 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 TGFβ-Smad3 signaling, alters TER in ADPKD cells[2]. Ouabain (25, 50 or 100 nM) treatment significantly reduces cell proliferation and viability in Raji cells in a dose-dependent manner, with IC_{50} of 76.48±4.03 nM. Ouabain increases the number of apoptotic cells, induces autophagy, and upregulates Beclin-1 in Raji cells[4].

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