Ru360

Cat. No.: HY-122898
Molecular Formula: C₂H₂₆Cl₃N₈O₅Ru₂³⁻
Molecular Weight: 550.78
Target: Calcium Channel; Mitochondrial Metabolism
Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease
Storage: Please store the product under the recommended conditions in the COA.

BIOLOGICAL ACTIVITY

Description
Ru360, an oxygen-bridged dinuclear ruthenium amine complex, is a selective mitochondrial calcium uptake inhibitor. Ru360 potently inhibits Ca²⁺ uptake into mitochondria with an IC₅₀ of 0.184 nM. Ru360 binds to mitochondria with high affinity (Kd of 0.34 nM). Ru360 has antiarrhythmic and cardioprotective effects[1][2].

IC₅₀ & Target
IC₅₀: 0.184 nM (Ca²⁺ uptake into mitochondria)[2]
Kd: 0.34 nM (Mitochondria)[2]

In Vitro
Ru360 permeates slowly into the cell, and specifically inhibits mitochondrial calcium uptake in intact cardiomyocytes and in isolated heart. 1 µm Ru360 is taken up by myocardial cells and accumulated in the cytosol in a biphasic manner[1].
During pelleting hypoxia, Ru360 (10 µM) significantly improves cell viability in wild type cardiomyocytes[3].

In Vivo
Ru360 (15-50 nmol/kg) treatment abolishes the incidence of arrhythmias and haemodynamic dysfunction elicited by reperfusion in a whole rat model. Ru360 administration partially inhibits calcium uptake, preventing mitochondria from depolarization by the opening of the mitochondrial permeability transition pore (mPTP)[1].

REFERENCES
Caution: Product has not been fully validated for medical applications. For research use only.

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