

Maxadilan

Chemical Properties

CAS No. : 135374-80-0

Formula:

Molecular Weight:

Keep away from moisture

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	Maxadilan is a specific and irreversible PAC1 receptor agonist and a potent vasodilatory peptide found in the salivary glands of sand flies. In human adipose-derived stem cells (hADSCs), Maxadilan exhibits anti-apoptotic activity. It suppresses pro-inflammatory cytokines (TNF- α) and enhances anti-inflammatory mediators (IL-10). Maxadilan activates leukocytes and inhibits vascular permeability via the PAC1 receptor. It also promotes neuronal differentiation in human adipose stem cells. This compound is useful for research on endotoxin shock, atherosclerosis, and neurodegenerative diseases.
Targets(IC50)	Apoptosis,Caspase,Interleukin,PACAP,PKA,TNF
In vitro	Maxadilan enhances the proliferation and migration of human adipose-derived stem cells (hADSC) at concentrations of 20-200 nM over a 24-hour period and facilitates cytokine-induced differentiation into functional neurons. At 80 nM for 24-48 hours, it reduces apoptosis in hADSC through PAC1R ligand-dependent activity mediated by the PKA signaling pathway and PAC1R dimer-dependent activity via the Wnt/ β -catenin pathway. In a chemically induced neural medium, Maxadilan (80 nM) efficiently promotes differentiation of hADSC into neuron-like cell morphology. It induces human neutrophil chemotaxis at concentrations of 5-100 ng/mL. Additionally, Maxadilan (134 nM, 30 minutes) increases small artery dilation accompanied by plasma leakage and leukocyte aggregation in hamster cheek pouches.
In vivo	Maxadilan, administered intraperitoneally at a dose of 0.137 mg/kg three times a week, reduces atherosclerosis in the aortic arch and brachiocephalic trunk of ApoE -/- mice under both SC and CED conditions, while maintaining or enhancing hypercholesterolemia. A single intraperitoneal injection of Maxadilan (0.137 mg/kg) can elevate blood glucose levels in NIH mice within 0-90 minutes. Maxadilan, when given daily at doses between 0.172-0.343 mg/kg for 21 days, increases body weight, lowers baseline blood glucose, and raises plasma insulin levels in NIH mice. Additionally, a single intraperitoneal injection of Maxadilan (0.5-10 μ g) reduces mortality in BALB/c mice induced by LPS. Maxadilan (3 μ g, intraperitoneally, once) suppresses serum TNF-4 levels while increasing IL-6 and IL-10 levels in BALB/c mice, and can prevent LPS-induced thrombocytopenia.

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