

Psalmotoxin 1 TFA

Chemical Properties

CAS No. :

Formula: C200H312N62O57S6.xC2HF3O2

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	Psalmotoxin 1 (PcTx1) TFA is a protein toxin that binds to the subunit interfaces of acid-sensing ion channel 1a (ASIC1a). It selectively and effectively inhibits ASIC1a by enhancing its apparent affinity for H ⁺ (IC ₅₀ : 0.9 nM). Psalmotoxin 1 TFA induces apoptosis and inhibits cancer cell migration, proliferation, and invasion. This compound is applicable in cancer or neurological disease research.
Targets(IC50)	Apoptosis,Sodium Channel
In vitro	Psalmotoxin 1, in the presence of TFA, modulates ASIC1a currents by notably altering the steady-state desensitization curve to reduce H ⁺ concentration, when applied at 20 nM for 125 seconds. At a concentration of 30 nM, it competes with Ca ²⁺ for binding to ASIC1a channels. Furthermore, Psalmotoxin 1 (100 or 200 ng, over 24-72 hours) significantly reduces migration, proliferation, and invasion in MCF-7 and MDA-MB-231 cells. Additionally, Psalmotoxin 1 at 100 ng/mL for 24 hours markedly inhibits acid-induced increases in intracellular calcium and LDH release, while also inducing apoptosis and cell cycle arrest in nucleus pulposus cells (NPC).
In vivo	Psalmotoxin 1 (icv, 1 ng/kg, single dose) TFA exerts neuroprotective effects in conscious stroke models by directly inhibiting ASIC1a. Additionally, Psalmotoxin 1 (intravenously, 10 ng/kg, once daily for 7 days) TFA suppresses tumor growth in a breast cancer mouse model.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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