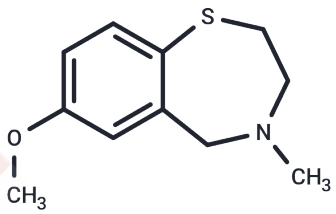
Data Sheet (Cat.No.T3438)

TargetMol

S107

Chemical Properties



CAS No. : 927871-76-9

Formula: C11H15NOS

Molecular Weight: 209.31

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	S107 is a RyR-selective 1, 4-benzothiazepine derivative that stabilizes RyR2 channels by enhancing the binding affinity of calstabin2 to mutant and/or PKA-phosphorylated channels.
Targets(IC50)	Others,Calcium Channel
In vitro	S107, a small compound, enhances calstabin2 binding to RyR2 at low nanomolar concentrations and does not interact with over 400 receptors, enzymes, and ion channels at up to 10 μM. It shows no effect on cardiac ion channels, including voltage-gated Na+, K+, and Ca2+ channels, or on normal Ca2+ signaling in cells[1]. S107 is a potential candidate for treating catecholaminergic polymorphic ventricular tachycardia (CPVT), exerting antiarrhythmic effects on CPVT-hiPSC-CMs. Pre-incubation with 10 μM S107 significantly reduces the incidence of CPVT-hiPSC-CMs presenting DADs to 25% by stabilizing the closed state of ryanodine receptor 2[2]. S107 may improve skeletal muscle function by stabilizing the RyR1-FKBP12 complex, increasing FKBP12 binding to RyR1 in SR vesicles in the presence of reduced glutathione and the NO-donor NOC12 but not in the presence of oxidized glutathione. It reverses the harmful effects of redox active species on SR Ca2+ release in skeletal muscle by binding to RyR1 low affinity sites [3].
In vivo	S107 effectively inhibits seizures and arrhythmias in mutant mice without blocking the channel or changing normal calcium (Ca2+) signaling; it specifically prevents leakage in the channel[1].

Solubility Information

Solubility	DMSO: 130 mg/mL (621.09 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (9.56 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.7776 mL	23.888 mL	47.776 mL
5 mM	0.9555 mL	4.7776 mL	9.5552 mL
10 mM	0.4778 mL	2.3888 mL	4.7776 mL
50 mM	0.0956 mL	0.4778 mL	0.9555 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Lehnart SE, et al. Leaky Ca
Sasaki K, et al. Patient-Specific Human Induced Pluripotent Stem Cell Model Assessed with Electrical Pacing Validates S107 as a Potential Therapeutic Agent for Catecholaminergic Polymorphic Ventricular Tachycardia. PLoS One. 2016 Oct 20;11(10):e20164795.
Mei Y, et al. Stabilization of the skeletal muscle ryanodine receptor ion channel-FKBP12 complex by the 1,4-benzothiazepine derivative S107. PLoS One. 2013;8(1):e54208.