KY02111

Catalog No.C12437 Batch:C1243703

Product Datasheet

Technical Data

Formula	$C_{18}H_{17}ClN_2O_3S$					
Molecular Weight	376.86	**CAS No.**	1118807-13-8			
Solubility (25°C)*	In vitro	DMSO	75 mg/mL (199.01 mM)			
		Water	Insoluble			
		Ethanol	Insoluble			
	In vivo (Add solvents to the product individually and in order)	Oral Administration	Homogeneous suspension	CMC-NA	≥5mg/ml	Taking the 1 mL working solution as an example, add 5 mg of this product to 1 ml of CMC-Na solution, mix evenly to obtain a homogeneous suspension with a final concentration of 5 mg/ml.

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Concentration \ Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.6535 mL	13.2675 mL	26.5351 mL
5 mM	0.5307 mL	2.6535 mL	5.3070 mL
10 mM	0.2654 mL	1.3268 mL	2.6535 mL
50 mM	0.0531 mL	0.2654 mL	0.5307 mL

Biological Activity

Description	KY02111 promotes differentiation of hPSCs to cardiomyocytes by inhibiting Wnt signaling, may act downstream of APC and GSK3β.
Targets	Wnt [1]
In vitro	KY02111 (10 μM) increases the ratio of beating cardiac colonies as much as 70%-94% in cell aggregates of two hESC lines (KhES-1 and KhES-3), four hiPSC lines (253G1, IMR90-1, IMR90-4, and RCHIPC0003), and a mouse ESC line (R1). This compound results in 73%-85% postive IMR90-1 hiPSCs expressing the cardiac markers, cardiac troponin T (cTnT), αActinin, or NKX2.5, whereas only a few DMSO-treated cells are positive for the markers. It results in 16% postive IMR90-1 hiPSCs expressing the cardiac pacemaker marker, HCN4, whereas the ratio of Vimentin-positive cells (fibroblasts) decreases 3.3-fold. KY02111-induced cardiomyocytes (KY-CMs) expresses the cardiac markers, αMHC, NKH2.5, and HCN4, and that all of the ion channel genes examined are expressed at levels similar to those of adult heart tissue. This chemical downregulates the expression of 72.7% target genes of canonical WNT signaling in IMR90-1 hiPSCs, suggesting that it inhibits canonical WNT signaling in hPSCs. It clearly reduces luciferase activities in both IMR90-1 hiPSCs and HEK293 cells in a dose-dependent manner in the TOPflash assay. This compound (10 μM-25 μM) increases cardiac differentiation about 80-fold in transgenic monkey ESCs compared to the control and does not show toxicity to cells even at high concentration. It significantly reduces luciferase activity in the TOPflash assay in SW480 cells, whereas XAV939 and IWP-2 does not. It dramatically reduces luciferase activity induced by GSK3β inhibitor BIO in SW480 cells, compared to that of XAV939 and IWP-2. This chemical alone produces approximately 80% cTnT-positive cells, and in combination with other WNT inhibitors does not significantly increase differentiation efficiency, which shows that it effectively produces a high proportion of functional cardiomyocytes from hPSCs. [1]
Features	May act downstream of APC and GSK3β in the canonical WNT signaling pathway.

References

https://pubmed.ncbi.nlm.nih.gov/23103164/

RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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