

KY02111

Catalog No: tcsc1975



Available Sizes

Size: 10mg

Size: 50mg



Specifications

CAS No:

1118807-13-8

Formula:

$C_{18}H_{17}ClN_2O_3S$

Pathway:

Stem Cell/Wnt

Target:

Wnt

Purity / Grade:

>98%

Solubility:

DMSO : 33.33 mg/mL (88.44 mM; Need ultrasonic)

Observed Molecular Weight:

376.86

Product Description

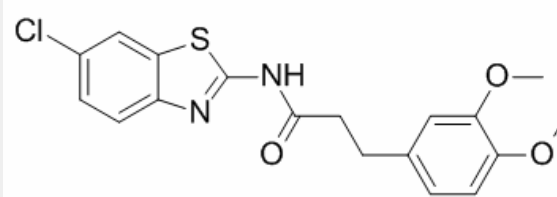
KY02111 is a small molecule which can promote differentiation of hPSCs to cardiomyocytes.

IC50 value:

Target: Wnt signaling inhibitor

KY02111 Induces downregulation of Wnt signaling target genes; inhibits canonical Wnt signaling in a manner distinct from other known Wnt inhibitors.

KY02111 (10 μ M) 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). KY02111 (10 μ M) results in 73%-85% positive IMR90-1 hiPSCs expressing the cardiac markers, cardiac troponin T (cTnT), α Actinin, or NKX2.5, whereas only a few DMSO-treated cells are positive for the markers. KY02111 (10 μ M) results in 16% positive 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, α MHC, NKX2.5, and HCN4, and that all of the ion channel genes examined are expressed at levels similar to those of adult heart tissue. KY02111 (10 μ M) downregulates the expression of 72.7% target genes of canonical WNT signaling in IMR90-1 hiPSCs, suggesting that KY02111 inhibits canonical WNT signaling in hPSCs. KY02111 (10 μ M) clearly reduces luciferase activities in both IMR90-1 hiPSCs and HEK293 cells in a dose-dependent manner in the TOPflash assay. KY02111 (10 μ M-25 μ M) 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. KY02111 (10 μ M) significantly reduces luciferase activity in the TOPflash assay in SW480 cells, whereas XAV939 and IWP-2 does not. KY02111 (10 μ M) dramatically reduces luciferase activity induced by GSK3 β inhibitor BIO in SW480 cells, compared to that of XAV939 and IWP-2. KY02111 alone produces approximately 80% cTnT-positive cells, KY02111 in combination with other WNT inhibitors does not significantly increase differentiation efficiency, which shows that KY02111 effectively produces a high proportion of functional cardiomyocytes from hPSCs [1].



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