

Product Data Sheet

Product Name: KY 02111

Cat. No.: GC14572

Chemical Properties

Cas. No. 1118807-13-8

Chemical Name N-(6-chloro-1,3-benzothiazol-2-yl)-3-(3,4-dimethoxyphenyl)propanamide

SMILES COC1=C(C=C(C=C1)CCC(=O)NC2=NC3=C(S2)C=C(C=C3)Cl)OC

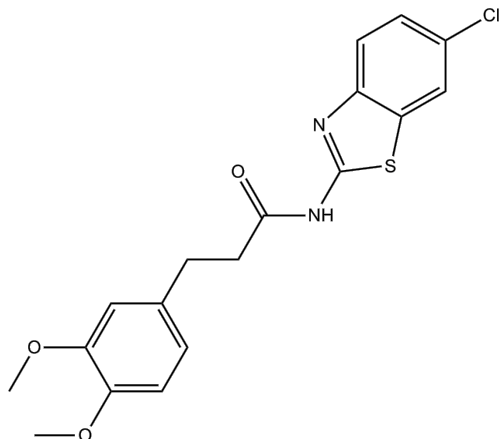
Formula $C_{18}H_{17}ClN_2O_3S$ M.Wt 376.86

Solubility $\geq 18.85\text{mg/mL}$ in DMSO, $\geq 7.06\text{mg/mL}$ in EtOH with ultrasonic and warming
Storage Store at 4°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

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Cell lines

IMR90-1 hiPSCs

Preparation method

The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20 °C for several months.

Reaction Conditions

10 µM; 12 or 24 hrs

Applications

In IMR90-1 hiPSCs, KY 02111 (10 µM) downregulated the expression of 72.7% target genes of canonical WNT signaling.

References:

[1]. Minami, I., et al., A small molecule that promotes cardiac differentiation of human pluripotent stem cells under defined, cytokine- and xeno-free conditions. Cell Rep, 2012. 2(5): p. 1448-60.

Background

KY 02111 is a selective inhibitor of Wnt may by targeting the downstream from GSK3β and APC in β-catenin destruction complex [1].

Wnt signaling pathways are a group of signal transduction pathways made of proteins and play an important role in passing signals from outside of a cell through cell surface receptors to the inside of the cell. Wnt signaling initially was identified as a pivotal mediator in carcinogenesis, but has since been recognized for its function in embryonic development, including body axis patterning, cell fate specification, cell proliferation, and cell migration which are necessary for proper formation of important tissues including bone, heart, and muscle [2].

KY 02111 is a potent Wnt inhibitor and has a different selectivity with the reported Wnt inhibitors. When tested with IMR90-1 hiPSCs transfected with TCF receptor plasmids, KY 02111 (1 µM)

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significantly reduced luciferase activities in a dose-dependent manner by inhibiting canonical WNT signaling pathway. In cardiac colonies on the day 30, KY 02111 showed that nearly 73%-85% of IMR90-1 hiPSCs expressed the cardiac markers [1].

References:

- [1]. Minami, I., et al., A small molecule that promotes cardiac differentiation of human pluripotent stem cells under defined, cytokine- and xeno-free conditions. *Cell Rep*, 2012. 2(5): p. 1448-60.
- [2]. Stamatakou, E., M. Hoyos-Flight, and P.C. Salinas, Wnt Signalling Promotes Actin Dynamics during Axon Remodelling through the Actin-Binding Protein Eps8. *PLoS One*, 2015. 10(8): p. e0134976.

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