IWP-4
Item No. 13954

CAS Registry No.: 686772-17-8
Formal Name: N-(6-methyl-2-benzothiazolyl)-2-[[3,4,6,7-tetrahydro-3-(2-methoxyphenyl)-4-oxothieno[3,2-d]pyrimidin-2-yl]thio]-acetamide
Synonym: Inhibitor of Wnt Production-4
MF: C23H20N4O3S3
FW: 496.6
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis: λmax: 279, 302, 343 nm

Laboratory Procedures
For long term storage, we suggest that IWP-4 be stored as supplied at -20°C. It should be stable for at least two years.
IWP-4 is supplied as a crystalline solid. A stock solution may be made by dissolving the IWP-4 in the solvent of choice.
IWP-4 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of IWP-4 in these solvents is approximately 2 and 5 mg/ml, respectively.
IWP-4 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, IWP-4 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. IWP-4 has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Wnt signaling proteins are small secreted proteins that are active in embryonic development, tissue homeostasis, and tumorigenesis. Wnt proteins bind to receptors on the cell surface, initiating a signaling cascade that leads to β-catenin activation of gene transcription. IWP-4 is an inhibitor of Wnt production that impairs Wnt pathway activity in vitro with an IC50 value of 25 nM.
IWP-4 inactivates Porcupine, a membrane-bound O-acyltransferase responsible for palmitoylating Wnt proteins, which is essential for their signaling ability and secretion. At 5 μM, IWP-4 has been shown to block Wnt-dependent phosphorylation of the low-density lipoprotein receptor-related protein 6 receptor and the scaffold protein Dishevelled, preventing the accumulation of β-catenin.

This compound has been used to induce cardiomyocyte differentiation from human pluripotent stem cells.

References

Related Products
For a list of related products please visit: www.caymanchem.com/catalog/13954