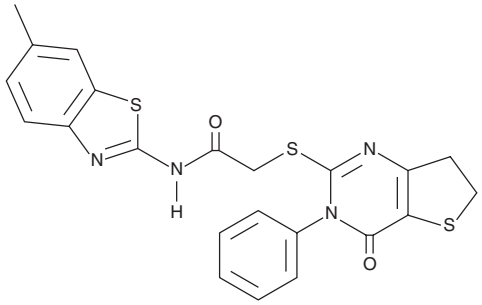
PRODUCT INFORMATION

IWP-2

Item No. 13951

CAS Registry No.:	686770-61-6
Formal Name:	N-(6-methyl-2-benzothiazolyl)-2-[(3,4,6,7-tetrahydro-4-oxo-3-phenylthieno[3,2-d]pyrimidin-2-yl)thio]-acetamide
Synonym:	Inhibitor of Wnt Production-2
MF:	$C_{22}H_{18}N_4O_2S_3$
FW:	466.6
Purity:	≥95%
UV/Vis.:	λ_{max}: 277, 302, 345 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

IWP-2 is supplied as a crystalline solid. A stock solution may be made by dissolving the IWP-2 in the solvent of choice. IWP-2 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of IWP-2 in these solvents is approximately 2 and 5 mg/ml, respectively.

IWP-2 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, IWP-2 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. IWP-2 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.

Description

Wnt signaling proteins are small secreted proteins that are active in embryonic development, tissue homeostasis, and tumorigenesis.[1-3] Wnt proteins bind to receptors on the cell surface, initiating a signaling cascade that leads to β-catenin activation of gene transcription. IWP-2 is an inhibitor of Wnt production that impairs Wnt pathway activity *in vitro* with an IC_{50} value of 27 nM.[4] IWP-2 inactivates Porcupine, a membrane-bound O-acyltransferase responsible for palmitoylating Wnt proteins, which is essential for their signaling ability and secretion.[4] At 5 µM, IWP-2 has been shown to block Wnt-dependent phosphorylation of the frizzled co-receptor and the scaffold protein Dishevelled, preventing the accumulation of β-catenin.[4] This compound has been used to suppress embryonic stem cell self-renewal and to decrease cancer cell proliferation, migration, and invasion.[5,6]

References

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2. Polakis, P. *Genes Dev.* **14**, 1837-1851 (2000).
3. Reya, T. and Clevers, H. *Nature* **434**, 834-850 (2005).
4. Chen, B., Dodge, M.E., Tang, W., *et al. Nat. Chem. Biol.* **5(2)**, 100-107 (2009).
5. Lian, X., Hsiao, C., Wilson, G., *et al. Proc. Natl. Acad. Sci. USA* **109(27)**, E1848-E1857 (2012).
6. Mo, M.-L., Li, M.-R., Chen, Z., *et al. Oncology Letters* **5(5)**, 1719-1723 (2013).

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