

Certificate of Analysis

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Product Name: IWP 2

Catalog No.: 3533

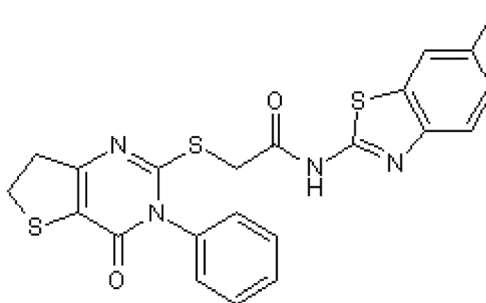
Batch No.: 8

CAS Number: 686770-61-6

IUPAC Name: *N*-(6-Methyl-2-benzothiazolyl)-2-[(3,4,6,7-tetrahydro-4-oxo-3-phenylthieno[3,2-*d*]pyrimidin-2-yl)thio]-acetamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₂₂ H ₁₈ N ₄ O ₂ S ₃ · ½H ₂ O
Batch Molecular Weight:	471.1
Physical Appearance:	Off-white solid
Solubility:	DMSO to 5 mM with gentle warming
Storage:	Store at +4°C
Batch Molecular Structure:	



2. ANALYTICAL DATA

HPLC:	Shows 99.2% purity
¹H NMR:	Consistent with structure
Mass Spectrum:	Consistent with structure
Microanalysis:	
	Carbon Hydrogen Nitrogen
Theoretical	56.09 3.96 11.89
Found	55.94 3.86 11.95

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

IWP 2 is a potent inhibitor of Wnt processing and secretion (IC_{50} = 27nM). IWP 2 inactivates PORCN, a membrane-bound O-acyltransferase (MBOAT), and selectively inhibits palmitoylation of Wnt. Blocks Wnt-dependent phosphorylation of Lrp6 receptor and Dvl2, and β -catenin accumulation. IWP 2 suppresses self-renewal in R1 embryonic stem cells and promotes cardiomyocyte differentiation from hPSCs. The compound has also been used in protocols to reprogram human somatic cells to chemically-induced PSCs.

Physical and Chemical Properties:

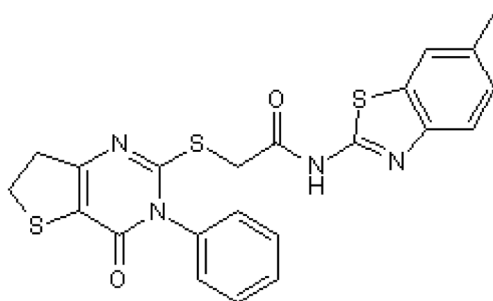
Batch Molecular Formula: $C_{22}H_{18}N_4O_2S_3 \cdot \frac{1}{4}H_2O$

Batch Molecular Weight: 471.1

Physical Appearance: Off-white solid

Minimum Purity: $\geq 98\%$

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

DMSO to 5 mM with gentle warming

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Guan *et al* (2022) Chemical reprogramming of human somatic cells to pluripotent stem cells. *Nature* **605** 325. PMID: 35418683.

Noor *et al* (2019) 3D printing of personalized thick and perfusable cardiac patches and hearts. *Adv Sci (Weinh)* **6** 1900344. PMID: 31179230.

Hoang *et al* (2018) Generation of spatial-patterned early-developing cardiac organoids using human pluripotent stem cells. *Nat.Protoc.* **13** 723. PMID: 29543795.

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