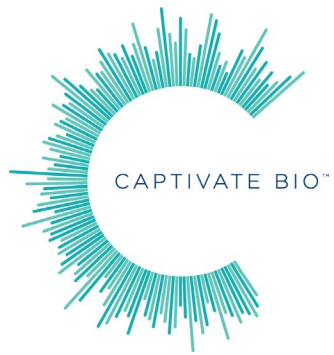


Technical Data Sheet:

IWP-2

| | |
|-----------------------------------|---|
| Catalog Number | SML03B |
| Synonyms | IWP 2, Inhibitor of WNT Production-2 |
| Size | 10 mg |
| Description | IWP-2 is an inhibitor of the Wnt pathway, specifically targeting membrane-bound O-acyltransferase porcupine (PORCN) with an IC ₅₀ of 27 nM. This inhibition, in turn, prevents Wnt activation, secretion, and signaling (Garcia-Reyes, et al.), which leads to decreased self-renewal of human embryonic stem cells (ESCs) (Kim, et al). IWP-2 has been an effective component within differentiation protocols of pluripotent stem cells (PSCs) into functional cardiomyocytes when combined with CHIR99021 (Cat. No. SML01B), IWP-4 (Cat. No. SML04A), Activin A, bFGF, and BMP4 (Lian, et al.). Additionally, IWP-2 shows promise in the differentiation of iPSCs into corneal epithelial cells (Mikhailova, et al.). |
| Molecular Weight | 466.60 |
| Molecular Formula | C ₂₂ H ₁₈ N ₄ O ₂ S ₃ |
| Chemical Name | Acetamide, N-(6-methyl-2-benzothiazolyl)-2-[(3,4,6,7-tetrahydro-4-oxo-3-phenylthieno[3,2-d]pyrimidin-2-yl)thio]- |
| CAS Number | 686770-61-6 |
| Target | Porcupine (PORCN) |
| Appearance | White to off-white (Solid) |
| Purity | ≥95% by NMR |
| Solubility and Reconstitution | Soluble in DMSO up to 4 mM, for example: 10 mg/428.632 mL = 0.023 mg/mL = 0.05 mM 10 mg/85.727 mL = 0.117 mg/mL = 0.25 mM 10 mg/42.863 mL = 0.233 mg/mL = 0.5 mM 10 mg/8.573 mL = 1.166 mg/mL = 2.5 mM |
| Storage Temperature and Stability | Powder: -20°C 3 years 4°C 2 years In solvent: -80°C 6 months -20°C 1 month |
| References | Garcia-Reyes, et al. 2018. Discovery of Inhibitor of Wnt Production 2 (IWP-2) and Related Compounds as Selective ATP-Competitive Inhibitors of Casein Kinase 1 (CK1). <i>J Med Chem</i> 61(9): 4087-4102. Kim, et al. 2013. Modulation of β-catenin function maintains mouse epiblast stem cell and human embryonic stem cell self-renewal. <i>Nature Communications</i> . 4(2403). Lian, et al. 2013. Directed cardiomyocyte differentiation from human pluripotent stem cells by modulating Wnt/β-catenin signaling under fully defined conditions. <i>Nature Protocols</i> 8(1): 162-175. |



Mikhailova, et al. 2014. Small-molecule induction promotes corneal epithelial cell differentiation from human induced pluripotent stem cells. *Stem Cell Reports*. 2(2): 219-231.