Technical Data Sheet: SANT-1

Catalog Number	SML08B
Synonyms	Shh signaling antagonist V
Size	10 mg
Description	SANT-1 is a potent antagonist of Smoothened (Smo), which in turn inhibits Hedgehog (Hh) signaling, specifically targeting Shh-LIGHT2 (IC_{50} of 20nM) and SmoA1-LIGHT2 (IC_{50} of 30nM). As Smoothened mediates Hedgehog activity, SANT-1 has the potential of affecting cellular patterning through differentiation and proliferation during embryonic development (Chen, et al.). When used in conjunction with CHIR99021 (Cat. No. SML01B), LDN193189 (Cat. No. SML05B), and Y27632 (Cat. No. SML13B), among others, SANT-1 aids in the generation of functional human pancreatic beta cells from human pluripotent stem cells (PSCs) (Pagliuca, et al.) in addition to the creation of pancreatic progenitors from PSCs (Nostro, et al.).
Molecular Weight	373.49
Molecular Formula	$C_{23}H_{27}N_5$
Chemical Name	1-Piperazinamine, N-[(3,5-dimethyl-1-phenyl-1H-pyrazol-4-yl)methylene]-4-(phenylmethyl)-
CAS Number	304909-07-7
Target	Smoothened (Smo), Hedgehog (Hh)
Appearance	White to off-white (Solid)
Purity	≥95% by LCMS
Solubility and Reconstitution	Soluble in DMSO up to 50 mM, for example: 10 mg/26.775 mL = 0.373 mg/mL = 1 mM 10 mg/5.355 mL = 1.867 mg/mL = 5 mM 10 mg/2.677 mL = 3.730 mg/mL = 10 mM 10 mg/1.339 mL = 7.468 mg/mL = 20 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	Chen, et al. 2002. Small molecule modulation of Smoothened activity. PNAS. 99(22): 14071-14076. Nostro, et al. 2015. Efficient generation of NKX6-1+ pancreatic progenitors from multiple human pluripotent stem cell lines. Stem Cell Reports. 4(4): 591-604. Pagliuca, et al. 2014. Generation of functional human pancreatic β cells in vitro. Cell 159: 428-439.

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