

Small Molecules

SANT-1

Hedgehog pathway inhibitor; Inhibits Smoothed (SMO)

Catalog #100-0538
100-0539

1 mg
5 mg



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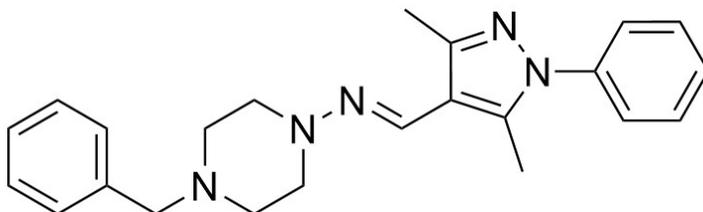
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Product Description

SANT-1 is a cell-permeable antagonist that binds directly to Smoothed (K_i = 2.4 nM; Chen et al.; Rominger et al.) and inhibits the Sonic hedgehog (Shh) signaling pathway.

Molecular Name:	SANT-1
Alternative Names:	Not applicable
CAS Number:	304909-07-7
Chemical Formula:	C ₂₃ H ₂₇ N ₅
Molecular Weight:	373.5 g/mol
Purity:	≥ 98%
Chemical Name:	N-[(3,5-dimethyl-1-phenyl-1H-pyrazol-4-yl)methylene]-4-(phenylmethyl)-1-piperazinamine
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	<ul style="list-style-type: none">• DMSO ≤ 8 mM• Absolute ethanol ≤ 13 mM For example, to prepare a 5 mM stock solution in DMSO, resuspend 1 mg in 535 µL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

DIFFERENTIATION

- Promotes beta cell differentiation from human embryonic stem cells (Yung et al.).

CANCER RESEARCH

- Blocks hedgehog signaling pathway leading to inhibition of tumorigenesis and proliferation in cancer lung cells (Bai et al.).

References

Bai X-Y et al. (2016) Blockade of hedgehog signaling synergistically increases sensitivity to epidermal growth factor receptor tyrosine kinase inhibitors in non-small-cell lung cancer cell lines. PLoS One 11(3): e0149370.

Chen JK et al. (2002) Small molecule modulation of Smoothed activity. Proc Natl Acad Sci USA 99(22): 14071–6.

Rominger CM et al. (2009) Evidence for allosteric interactions of antagonist binding to the Smoothed receptor. J Pharmacol Exp Ther 329(3): 995–1005.

Yung T et al. (2019) Sufu- and Spop-mediated downregulation of Hedgehog signaling promotes beta cell differentiation through organ-specific niche signals. Nat Commun 10(1): 4647.

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