Small Molecules

GANT61

Hedgehog pathway inhibitor; Inhibits GLI

Catalog # 73692

10 mg

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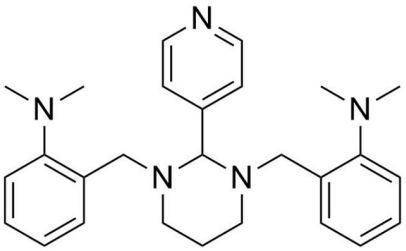
Product Description

GANT61 is a hexahydropyrimidine derivative that selectively inhibits GLI transcription factors in the Hedgehog signaling pathway. GANT61 acts downstream of Smoothened to inhibit both GLI1- and GLI2-mediated transcription (IC_{50} = 5 µM in a GLI-transfected cell line) by preventing their binding to DNA (Lauth et al.).

Molecular Name:	GANT61
Alternative Names:	NSC 136476
CAS Number:	500579-04-4
Chemical Formula:	$C_{27}H_{35}N_5$
Molecular Weight:	429.6 g/mol
Purity:	≥ 98%
Chemical Name:	2,2'-[[dihydro-2-(4-pyridinyl)-1,3(2H,4H)-pyrimidinediyl]bis(methylene)]bis(N,N-dimethyl-benzenamine)
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:	· Absolute ethanol ≤ 2.3 mM For example, to prepare a 1 mM stock solution in absolute ethanol, resuspend 10 mg in 23.3 mL of absolute ethanol. 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 absolute ethanol 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 ethanol concentration above 0.1% due to potential cell toxicity.

Published Applications

CANCER RESEARCH
· Inhibits in vitro proliferation of cancer cell lines (PANC1 and 22Rv1) with elevated GLI1 levels, and prevents the development of 22Rv1 tumors in mice (Lauth et al.).
· Inhibits pancreatic cancer stem cell growth in vitro and in mouse xenograft model (Fu et al.).
· Induces cell death of primitive neuroectodermal tumor cell line in a caspase-independent manner by inhibiting DNA replication (Matsumoto et al.).
· Causes apoptosis in myeloid leukemia cells and in some cell lines is more effective when combined with Rapamycin (Catalog #73362) (Pan et al.).

References

Fu J et al. (2013) GANT-61 inhibits pancreatic cancer stem cell growth in vitro and in NOD/SCID/IL2R gamma null mice xenograft. Cancer Lett 330(1): 22–32.
Lauth M et al. (2007) Inhibition of GLI-mediated transcription and tumor cell growth by small-molecule antagonists. Proc Natl Acad Sci USA 104(20): 8455–60.
Matsumoto T et al. (2014) The GANT61, a GLI inhibitor, induces caspase-independent apoptosis of SK-N-LO cells. Biol Pharm Bull 37(4): 633–41.
Pan D et al. (2012) Gli inhibitor GANT61 causes apoptosis in myeloid leukemia cells and acts in synergy with rapamycin. Leuk Res 36(6): 742–8.

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