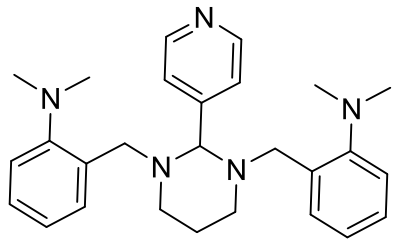
# Product data sheet

| | |
|---|---|
| MedKoo Cat#: 406570<br>Name: GANT61<br>CAS#: 500579-04-4<br>Chemical Formula: $C_{27}H_{35}N_5$<br>Exact Mass: 429.28925<br>Molecular Weight: 429.6 |  |
| Product supplied as: | Powder |
| Purity (by HPLC): | ≥ 98% |
| Shipping conditions | Ambient temperature |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. |
| | In solvent: -80°C 3 months; -20°C 2 weeks. |

**1. Product description:**

GANT61 is a small-molecule inhibitor of glioma-associated oncogene 1 (GLI1)- and GLI2-mediated transcription at the nuclear level that exerts its effect by preventing DNA binding. It has been demonstrated to induce cell death against Ewing's sarcoma family tumor (ESFT) cell lines in a dose-dependent manner.

**2. CoA, QC data, SDS, and handling instruction**

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

**3. Solubility data**

| Solvent | Max Conc. mg/mL | Max Conc. mM |
|---|---|---|
| Ethanol | 85 | 197.86 |

**4. Stock solution preparation table:**

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.33 mL | 11.64 mL | 23.28 mL |
| 5 mM | 0.47 mL | 2.33 mL | 4.66 mL |
| 10 mM | 0.23 mL | 1.16 mL | 2.33 mL |
| 50 mM | 0.05 mL | 0.23 mL | 0.47 mL |

**5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator**

Please refer the product web page under section of “Calculator”

**6. Recommended literature which reported protocols for in vitro and in vivo study**

In vitro study

1. Mazumdar T, Devecchio J, Agyeman A, Shi T, Houghton JA. Blocking Hedgehog survival signaling at the level of the GLI genes induces DNA damage and extensive cell death in human colon carcinoma cells. Cancer Res. 2011 Sep 1;71(17):5904-14. doi: 10.1158/0008-5472.CAN-10-4173. Epub 2011 Jul 11. PMID: 21747117; PMCID: PMC3165104.

2. Pan D, Li Y, Li Z, Wang Y, Wang P, Liang Y. Gli inhibitor GANT61 causes apoptosis in myeloid leukemia cells and acts in synergy with rapamycin. Leuk Res. 2012 Jun;36(6):742-8. doi: 10.1016/j.leukres.2012.02.012. Epub 2012 Mar 6. PMID: 22398221.

In vivo study

1. Qin S, Sun D, Li X, Kong F, Yu Q, Hua H, Zheng K, Tang R. GANT61 alleviates arthritic symptoms by targeting fibroblast-like synoviocytes in CIA rats. J Orthop Sci. 2019 Mar;24(2):353-360. doi: 10.1016/j.jos.2018.09.003. Epub 2018 Sep 27. PMID: 30268354.

**7. Bioactivity**

Biological target:

GANT 61 is an inhibitor of Gli1 and Gli2 targeting the Hedgehog/GLI pathway.

# Product data sheet

In vitro activity

In human colon carcinoma cells, treatment with the Gli small-molecule inhibitor GANT61 induces extensive cell death. GANT61 induced transient cellular accumulation at G(1)-S (24 hours) and in early S-phase (32 hours), with elevated p21(Cip1), cyclin E, and cyclin A in HT29 cells. GANT61 induced DNA damage within 24 hours, with the appearance of p-ATM and p-Chk2. Pharmacologic inhibition of Gli1 and Gli2 by GANT61 or genetic inhibition by transient transfection of the Gli3 repressor (Gli3R) downregulated Gli1 and Gli2 expression and induced γH2AX, PARP cleavage, caspase-3 activation, and cell death. GANT61 induced γH2AX nuclear foci, while transient transfection of Gli3R showed expression of Gli3R and γH2AX foci within the same nuclei in HT29, SW480, and HCT116. GANT61 specifically targeted Gli1 and Gli2 substantiated by specific inhibition of (i) direct binding of Gli1 and Gli2 to the promoters of target genes HIP1 and BCL-2, (ii) Gli-luciferase activity, and (iii) transcriptional activation of BCL-2. Taken together, these findings establish that inhibition of HH signaling at the level of the GLI genes downstream of Smo is critical in the induction of DNA damage in early S-phase, leading to cell death in human colon carcinoma cells.

Reference: Cancer Res. 2011 Sep 1;71(17):5904-14. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/21747117/

In vivo activity

The 20 mg/kg GANT61 treatment reduced the incidence of collagen-induced arthritis (CIA) and relieved the arthritis symptoms in CIA rats. The Bcl-2 was upregulated and the Bax was downregulated in the CIA rats synovium. The 10 mg/kg and 20 mg/kg GANT61 diminished the Bcl-2 expression, 20 mg/kg GANT61 increased the Bax and activated the Caspases3 in the CIA synovium. The proliferation of CIA-FLS was significantly higher and the apoptosis of the CIA-FLS was lower than that of the control group. The 10 mg/kg and 20 mg/kg GANT61 treatment can reduce cell proliferation and induce apoptosis by diminishing Bcl-2 and increasing the Bax in CIA-FLS.

Reference: J Orthop Sci. 2019 Mar;24(2):353-360. https://linkinghub.elsevier.com/retrieve/pii/S0949-2658(18)30248-3

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*