# Product data sheet

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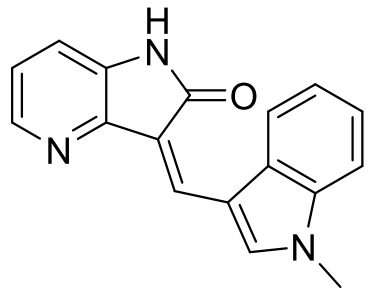
|---|---|
| MedKoo Cat#: 406799<br>Name: GW-441756<br>CAS: 504433-23-2<br>Chemical Formula: $C_{17}H_{13}N_3O$<br>Exact Mass: 275.1059<br>Molecular Weight: 275.311 |  |
| Product supplied as: | Powder |
| Purity (by HPLC): | ≥ 98% |
| Shipping conditions | Ambient temperature |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. |
| | In solvent: -80°C 3 months; -20°C 2 weeks. |

**1. Product description:**
GW-441756 is a potent inhibitor of TrkA (IC50 = 2 nM). Trk inhibition reduces cell proliferation and potentiates the effects of chemotherapeutic agents in Ewing sarcoma.

**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 |
|---|---|---|
| DMF | 1.0 | 3.63 |
| DMSO | 13.53 | 49.15 |

**4. Stock solution preparation table:**

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 3.63 mL | 18.16 mL | 36.32 mL |
| 5 mM | 0.73 mL | 3.63 mL | 7.26 mL |
| 10 mM | 0.36 mL | 1.82 mL | 3.63 mL |
| 50 mM | 0.07 mL | 0.36 mL | 0.73 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. Di Donato M, Galasso G, Giovannelli P, Sinisi AA, Migliaccio A, Castoria G. Targeting the Nerve Growth Factor Signaling Impairs the Proliferative and Migratory Phenotype of Triple-Negative Breast Cancer Cells. Front Cell Dev Biol. 2021 Jun 29;9:676568. doi: 10.3389/fcell.2021.676568. PMID: 34268306; PMCID: PMC8275826.
2. Ruggeri P, Farina AR, Di Ianni N, Cappabianca L, Ragone M, Ianni G, Gulino A, Mackay AR. The TrkAIII oncoprotein inhibits mitochondrial free radical ROS-induced death of SH-SY5Y neuroblastoma cells by augmenting SOD2 expression and activity at the mitochondria, within the context of a tumour stem cell-like phenotype. PLoS One. 2014 Apr 15;9(4):e94568. doi: 10.1371/journal.pone.0094568. PMID: 24736663; PMCID: PMC3988074.

In vivo study

1. Dias B, Serrão P, Cruz F, Charrua A. Effect of Water Avoidance Stress on serum and urinary NGF levels in rats: diagnostic and therapeutic implications for BPS/IC patients. Sci Rep. 2019 Oct 1;9(1):14113. doi: 10.1038/s41598-019-50576-4. PMID: 31575913; PMCID: PMC6773881.
2. Zhang Q, Descamps O, Hart MJ, Poksay KS, Spilman P, Kane DJ, Gorostiza O, John V, Bredesen DE. Paradoxical effect of TrkA inhibition in Alzheimer's disease models. J Alzheimers Dis. 2014;40(3):605-617. doi: 10.3233/JAD-130017. PMID: 24531152; PMCID: PMC4091737.

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**7. Bioactivity**

Biological target:

GW 441756 is a potent and specific nerve growth factor (NGF) receptor tyrosine kinases A (TrkA) inhibitor ($IC_{50}$=2 nM), which eliminates the BmK NSPK-induced neurite outgrowth.

In vitro activity

GW441756 significantly ($p < 0.05$ in Figures 3A,B and Supplementary Figure 2F) reduced the NGF effect, leaving almost unaltered the spheroid size when used alone, as a control.

Reference: Front Cell Dev Biol. 2021 Jun 29;9:676568. https://pubmed.ncbi.nlm.nih.gov/34268306/

In vivo activity

The mechanical pain threshold of WAS group decrease from day 0 basal value of 40 ± 24 g to day 10 value of 6 ± 2 g (Fig. 2E; paired t test: $p = 0.0415$). The daily administration of GW441756 prevented the decrease in mechanical pain threshold. At day 0 the rats presented abdominal mechanical pain threshold of 37 ± 19 g and at day 10 the mechanical pain threshold was 25 ± 18 g (Fig. 2F; paired t test: $p = 0.2374$).

Reference: Sci Rep. 2019 Oct 1;9(1):14113. https://pubmed.ncbi.nlm.nih.gov/31575913/

*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.*