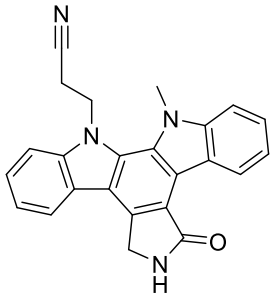
Product data sheet

MedKoo Cat#: 406206 Name: GO-6976 CAS#: 136194-77-9 Chemical Formula: $C_{24}H_{18}N_4O$ Exact Mass: 378.14806 Molecular Weight: 378.43	
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:

GO 6976, also known as PD-406976, is a potent inhibitor of neurotrophin-receptor intrinsic tyrosine kinase. GO 6976 blocked neurotrophin-induced signaling and autophosphorylation of neurotrophin-specific tyrosine kinase (Trk) receptors, either Trk B in cortical neurons or Trk A in GT1-1-trk9 cells.

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
DMSO	25.0	67.26

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.64 mL	13.21 mL	26.42 mL
5 mM	0.53 mL	2.64 mL	5.28 mL
10 mM	0.26 mL	1.32 mL	2.64 mL
50 mM	0.05 mL	0.26 mL	0.53 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. Cao ZR, Chen XP, Feng M, Hou YL, Li Y, Hu XL, Huang ZL, Hu J. The effect of Gö6976 on chronic myeloid leukemia in vitro and in vivo. Hematology. 2021 Dec;26(1):543-551. doi: 10.1080/16078454.2021.1945235. PMID: 34348586.
2. Yoshida A, Ookura M, Zokumasu K, Ueda T. Gö6976, a FLT3 kinase inhibitor, exerts potent cytotoxic activity against acute leukemia via inhibition of survivin and MCL-1. Biochem Pharmacol. 2014 Jul 1;90(1):16-24. doi: 10.1016/j.bcp.2014.04.002. Epub 2014 Apr 13. PMID: 24735609.

In vivo study

1. Cao ZR, Chen XP, Feng M, Hou YL, Li Y, Hu XL, Huang ZL, Hu J. The effect of Gö6976 on chronic myeloid leukemia in vitro and in vivo. Hematology. 2021 Dec;26(1):543-551. doi: 10.1080/16078454.2021.1945235. PMID: 34348586.
2. Yoon TW, Kim YI, Cho H, Brand DD, Rosloniec EF, Myers LK, Postlethwaite AE, Hasty KA, Stuart JM, Yi AK. Ameliorating effects of Gö6976, a pharmacological agent that inhibits protein kinase D, on collagen-induced arthritis. PLoS One. 2019 Dec 6;14(12):e0226145. doi: 10.1371/journal.pone.0226145. PMID: 31809526; PMCID: PMC6897462.

7. Bioactivity

Biological target:

Go6976 is a Protein Kinase C (PKC) inhibitor, with an IC50 of 20 nM.

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In vitro activity

In vitro experiments were conducted to explore the effect of Gö6976 on leukemia cells. The CCK-8 assay results showed that the optical density (OD) of K562 cells in the Gö6976 groups was decreased at 24, 48 and 72 h compared with that in the control group. To further explore whether Gö6976 affects the anti-CML effect of TKIs, imatinib was added for the study. At the same time, the proliferation of K562 cells in the groups treated with imatinib and Gö6976 was more inhibited than in the group treated with imatinib alone, and the difference was statistically significant. The above results indicate that Gö6976 has a significant inhibitory effect on the growth of K562 cells and can enhance the sensitivity of K562 cells to imatinib.

Reference: Hematology. 2021 Dec;26(1):543-551. https://pubmed.ncbi.nlm.nih.gov/34348586/

In vivo activity

To explore the effects of Gö6976 in the body, a mouse model of CML was created. Mice began to develop leukemic symptoms at approximately 3 weeks after injection of tumor cells. Compared with the control group, the mice in the Gö6976 group had significantly less weight loss 5 weeks after injection. The number of WBCs in the 2.5 mg/kg Gö6976 group was significantly decreased compared with that in the control group from the 3rd to the 5th weeks. At the fourth week, the CD45+ leukemia cells in the 2.5 mg/kg Gö6976 group were significantly fewer than those in the control group. The survival time of the mice in the 2.5 mg/kg Gö6976 group was significantly longer than that of the mice in the control group. In summary, Gö6976 can directly inhibit the progression of CML and effectively increase the survival rate of mice.

Reference: Hematology. 2021 Dec;26(1):543-551. https://pubmed.ncbi.nlm.nih.gov/34348586/