

Product data sheet



MedKoo Cat#: 406593 Name: G-749 CAS#: 1457983-28-6 Chemical Formula: C ₂₅ H ₂₅ BrN ₆ O ₂ Exact Mass: 520.12224 Molecular Weight: 521.41		
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:

G-749 is a novel FLT3 inhibitor that showed potent and sustained inhibition of the FLT3 wild type and mutants including FLT3-ITD, FLT3-D835Y, FLT3-ITD/N676D, and FLT3-ITD/F691L in cellular assays. G-749 retained its inhibitory potency in various drug-resistance milieus such as patient plasma, FLT3 ligand surge, and stromal protection. Furthermore, it displayed potent antileukemic activity in bone marrow blasts from AML patients regardless of FLT3 mutation status, including those with little or only minor responses to AC220 or PKC412. Oral administration of G-749 yielded complete tumor regression and increased life span in animal models. Thus, G-749 appears to be a promising next-generation drug candidate for the treatment of relapsed and refractory AML patients with various FLT3-ITD/FLT3-TKD mutants and further shows the ability to overcome drug resistance (Blood. 2014 Apr 3;123(14):2209-19).

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	17.33	33.24
DMF	16.0	30.69
DMF:PBS (pH 7.2) (1:3)	0.25	0.48

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.92 mL	9.59 mL	19.18 mL
5 mM	0.38 mL	1.92 mL	3.84 mL
10 mM	0.19 mL	0.96 mL	1.92 mL
50 mM	0.04 mL	0.19 mL	0.38 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. Lee HK, Kim HW, Lee IY, Lee J, Lee J, Jung DS, Lee SY, Park SH, Hwang H, Choi JS, Kim JH, Kim SW, Kim JK, Cools J, Koh JS, Song HJ. G-749, a novel FLT3 kinase inhibitor, can overcome drug resistance for the treatment of acute myeloid leukemia. Blood. 2014 Apr 3;123(14):2209-19. doi: 10.1182/blood-2013-04-493916. Epub 2014 Feb 14. PMID: 24532805; PMCID: PMC3975259.

In vivo study

1. Lee HK, Kim HW, Lee IY, Lee J, Lee J, Jung DS, Lee SY, Park SH, Hwang H, Choi JS, Kim JH, Kim SW, Kim JK, Cools J, Koh JS, Song HJ. G-749, a novel FLT3 kinase inhibitor, can overcome drug resistance for the treatment of acute myeloid leukemia. Blood. 2014 Apr 3;123(14):2209-19. doi: 10.1182/blood-2013-04-493916. Epub 2014 Feb 14. PMID: 24532805; PMCID: PMC3975259.

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7. Bioactivity

Biological target:

G-749 is a potent, oral active and ATP competitive FLT3 inhibitor, with IC₅₀s of 0.4 nM and 0.6 nM for FLT3 wild type and FLT3-D835Y, respectively.

In vitro activity

Potent inhibition of FLT3 was confirmed in leukemia cells where G-749 inhibited autophosphorylation of FLT3 with an IC₅₀ value of ≤8 nM in FLT3-WT bearing RS4-11 and in FLT3-ITD harboring MV4-11 and Molm-14 cells (Figure 1C and supplemental Figure 3A-B).

Reference: Blood. 2014 Apr 3; 123(14): 2209–2219. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3975259/>

In vivo activity

To assess the in vivo pharmacodynamic effect of G-749, a single dose of G-749 HCl salt (10 mg/kg) was administered orally to subcutaneous MV4-11 xenograft mice and showed sustained inhibition of p-FLT3, p-STAT5, and p-ERK1/2 (Figure 5A-B). These data indicate that G-749 effectively inhibits the FLT3 pathway and that its inhibition lasts for 24 hours.

Reference: Blood. 2014 Apr 3; 123(14): 2209–2219. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3975259/>

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.