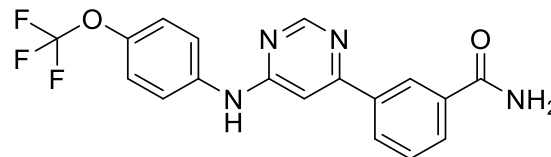


Product data sheet



MedKoo Cat#: 401473
Name: GNF-2
CAS: 778270-11-4
Chemical Formula: C₁₈H₁₃F₃N₄O₂
Exact Mass: 374.09906
Molecular Weight: 374.3232



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:

GNF-2 is an allosteric inhibitor of Bcr-abl tyrosine kinase activity (IC₅₀ = 267 nM); inhibits proliferation and induces apoptosis in Bcr-abl-expressing cells. Selective for Bcr-abl over a panel of serine, threonine and tyrosine kinases. Non-ATP-competitive.

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	25.0	66.79
DMF:PBS (pH 7.2) (1:2)	0.3	0.80
DMSO	55.36	147.89
Ethanol	9.49	25.34

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.67 mL	13.36 mL	26.72 mL
5 mM	0.53 mL	2.67 mL	5.34 mL
10 mM	0.27 mL	1.34 mL	2.67 mL
50 mM	0.05 mL	0.27 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. Song GJ, Rahman MH, Jha MK, Gupta DP, Park SH, Kim JH, Lee SH, Lee IK, Sim T, Bae YC, Lee WH, Suk K. A Bcr-Abl Inhibitor GNF-2 Attenuates Inflammatory Activation of Glia and Chronic Pain. *Front Pharmacol*. 2019 May 20;10:543. doi: 10.3389/fphar.2019.00543. PMID: 31164822; PMCID: PMC6535676.
2. Clark MJ, Miduturu C, Schmidt AG, Zhu X, Pitts JD, Wang J, Potisopon S, Zhang J, Wojciechowski A, Hann Chu JJ, Gray NS, Yang PL. GNF-2 Inhibits Dengue Virus by Targeting Abl Kinases and the Viral E Protein. *Cell Chem Biol*. 2016 Apr 21;23(4):443-52. doi: 10.1016/j.chembiol.2016.03.010. PMID: 27105280; PMCID: PMC4865888.

In vivo study

1. Song GJ, Rahman MH, Jha MK, Gupta DP, Park SH, Kim JH, Lee SH, Lee IK, Sim T, Bae YC, Lee WH, Suk K. A Bcr-Abl Inhibitor GNF-2 Attenuates Inflammatory Activation of Glia and Chronic Pain. *Front Pharmacol*. 2019 May 20;10:543. doi: 10.3389/fphar.2019.00543. PMID: 31164822; PMCID: PMC6535676.

7. Bioactivity

Product data sheet



Biological target:

GNF-2 is a highly selective, allosteric, non-ATP competitive inhibitor of Bcr-Abl. GNF-2 inhibits Ba/F3.p210 proliferation with an IC50 of 138 nM.

In vitro activity

Here, this study shows that the allosteric Abl kinase inhibitor GNF-2 interferes with dengue virus replication via activity mediated by cellular Abl kinases but additionally blocks viral entry via an Abl-independent mechanism. Biotin- and fluorophore-conjugated derivatives of GNF-2 interact with the dengue glycoprotein, E, in the pre-fusion conformation that exists on the virion surface, and that this interaction inhibits viral entry. This study establishes GNF-2 as an antiviral compound with polypharmacological activity and provides "lead" compounds for further optimization efforts.

Reference: Cell Chem Biol. 2016 Apr 21;23(4):443-52. <https://pubmed.ncbi.nlm.nih.gov/27105280/>

In vivo activity

The effect of GNF-2 on microglial activation was further tested in vivo using a mouse model of LPS-induced neuroinflammation. As shown in Figure 5A, GNF-2 treatment in the pre-treatment group started 24 h before LPS injection. The expression levels of TNF- α and IL-1 β mRNA were significantly diminished following GNF-2 pre-treatment (Figure 5B,G). Similarly, GNF-2 pre-treatment significantly reduced the expression of TNF- α protein induced by LPS (Figure 5C,H). Upon LPS injection, a significant increase in the number of Iba-1-positive microglial cells was observed in the cortex of mice brain, where microglia displayed enhanced Iba-1 immunoreactivity with short and thick processes when compared to control mice (Figure 5E,J).

Reference: Front Pharmacol. 2019 May 20;10:543. <https://pubmed.ncbi.nlm.nih.gov/31164822/>

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.