

Product data sheet



MedKoo Cat#: 555227 Name: GC376 sodium CAS#: 1416992-39-6 (sodium) Chemical Formula: C ₂₁ H ₃₀ N ₃ NaO ₈ S Molecular Weight: 507.53	
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:

GC376 is a 3CLpro inhibitor (3C-like protease inhibitor). GC376 showed promise in treating cats with certain presentations of FIP and has opened the door to targeted antiviral drug therapy.

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	55.0	108.37
DMF	10.0	19.70
PBS	10.0	19.70
Water	100.0	197.03
Ethanol	2.0	3.94

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.97 mL	9.85 mL	19.70 mL
5 mM	0.39 mL	1.97 mL	3.94 mL
10 mM	0.20 mL	0.99 mL	1.97 mL
50 mM	0.04 mL	0.20 mL	0.39 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. Fu L, Ye F, Feng Y, Yu F, Wang Q, Wu Y, Zhao C, Sun H, Huang B, Niu P, Song H, Shi Y, Li X, Tan W, Qi J, Gao GF. Both Boceprevir and GC376 efficaciously inhibit SARS-CoV-2 by targeting its main protease. *Nat Commun.* 2020 Sep 4;11(1):4417. doi: 10.1038/s41467-020-18233-x. PMID: 32887884; PMCID: PMC7474075.

In vivo study

1. Cáceres CJ, Cardenas-Garcia S, Carnaccini S, Seibert B, Rajao DS, Wang J, Perez DR. Efficacy of GC-376 against SARS-CoV-2 virus infection in the K18 hACE2 transgenic mouse model. *Sci Rep.* 2021 May 5;11(1):9609. doi: 10.1038/s41598-021-89013-w. PMID: 33953295; PMCID: PMC8100161.

7. Bioactivity

Biological target: GC376 inhibits the replication of viruses TGEV, FIPV and PTV with IC₅₀ values of 0.15, 0.2 and 0.15 μM, respectively.

In vitro activity

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Boceprevir and GC376 both efficaciously inhibit SARS-CoV-2 in Vero cells by targeting Mpro. Moreover, combined application of GC376 with Remdesivir, a nucleotide analogue that inhibits viral RNA dependent RNA polymerase (RdRp), results in sterilizing additive effect. Further structural analysis reveals binding of both inhibitors to the catalytically active side of SARS-CoV-2 protease Mpro as main mechanism of inhibition.

Reference: Nat Commun. 2020 Sep 4;11(1):4417. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7474075/>

In vivo activity

Using the K18-hACE2 mouse model, the in vivo antiviral efficacy of GC-376 against SARS-CoV-2 was evaluated. GC-376 treatment was not toxic in K18-hACE2 mice. Overall outcome of clinical symptoms and survival upon SARS-CoV-2 challenge were not improved in mice treated with GC-376 compared to controls. The treatment with GC-376 slightly improved survival from 0 to 20% in mice challenged with a high virus dose at 105 TCID50/mouse. Most notably, GC-376 treatment led to milder tissue lesions, reduced viral loads, fewer presence of viral antigen, and reduced inflammation in comparison to vehicle-treated controls in mice challenged with a low virus dose at 103 TCID50/mouse.

Reference: Sci Rep. 2021 May 5;11(1):9609. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8100161/>

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.