

# Product data sheet



MedKoo Cat#: 555738 Name: RU320521 CAS#: 2262452-06-0 Chemical Formula: C <sub>19</sub> H <sub>12</sub> Cl <sub>2</sub> N <sub>4</sub> O <sub>3</sub> Exact Mass: 414.0286 Molecular Weight: 415.23	
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:

RU.521, also known as RU320521, is a potent and selective inhibitor of cGAS, inhibiting cGAS-mediated signaling, being active in murine bone marrow-derived macrophage.

## 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	83	199.89
Ethanol	2	4.82

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.41 mL	12.04 mL	24.08 mL
5 mM	0.48 mL	2.41 mL	4.82 mL
10 mM	0.24 mL	1.20 mL	2.41 mL
50 mM	0.05 mL	0.24 mL	0.48 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. Wisner C, Kim B, Vincent J, Ascano M. Small molecule inhibition of human cGAS reduces total cGAMP output and cytokine expression in cells. *Sci Rep.* 2020 May 5;10(1):7604. doi: 10.1038/s41598-020-64348-y. PMID: 32371942; PMCID: PMC7200739.

### In vivo study

1. Muire PJ, Lofgren AL, Shiels SM, Wenke JC. Fracture healing in a polytrauma rat model is influenced by mtDNA:cGAS complex mediated pro-inflammation. *J Exp Orthop.* 2023 Sep 1;10(1):90. doi: 10.1186/s40634-023-00637-5. PMID: 37656236.
2. Jiang Z, Jiang Y, Fan J, Zhang J, Xu G, Fan Y, Zhang L, Qin X, Jiang X, Mao L, Liu G, Chen C, Zou Z. Inhibition of cGAS ameliorates acute lung injury triggered by zinc oxide nanoparticles. *Toxicol Lett.* 2023 Jan 15;373:62-75. doi: 10.1016/j.toxlet.2022.11.002. Epub 2022 Nov 8. PMID: 36368621.

## 7. Bioactivity

### Biological target:

RU320521 inhibits the cGAS-mediated signaling with IC<sub>50</sub> of 700 nM. RU.521 binds to the cGAS/dsDNA complex with K<sub>d</sub> of 36.2 nM.

# Product data sheet



## In vitro activity

---

RU320521 is capable of potently and selectively inhibiting mouse and human cGAS in cell lines and human primary cells. When RU320521 is applied to cells, the production of dsDNA-induced intracellular cGAMP is suppressed in a dose-dependent manner. This work validates the use of RU320521 for probing DNA-induced innate immune responses and underscores its potential as an ideal scaffold towards pre-clinical development, given its potency against human and mouse cGAS.

Reference: Sci Rep. 2020 May 5;10(1):7604. <https://pubmed.ncbi.nlm.nih.gov/32371942/>

## In vivo activity

---

RU320521 was investigated in a study focused on trauma-induced delayed bone healing. In C57BL/6 J mice, RU320521 reduced IFN $\beta$  levels in bronchioalveolar fluid at 24 hours. RU320521 administration immediately after injury led to improved bone healing. These data reveal that the cGAS-STING signaling pathway influences trauma-induced delayed bone healing.

Reference: J Exp Orthop. 2023 Sep 1;10(1):90. <https://pubmed.ncbi.nlm.nih.gov/37656236/>

*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.*