

Product data sheet



MedKoo Cat#: 526794 Name: SC-514 CAS#: 354812-17-2 Chemical Formula: C ₉ H ₈ N ₂ OS ₂ Exact Mass: 224.0078 Molecular Weight: 224.30	
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:

SC-514 is a selective and reversible inhibitor of IκB kinase 2 (IKK2) that may target osteoclastogenesis. SC-514 dose-dependently inhibits RANKL-induced osteoclastogenesis and induced apoptosis and caspase 3 activation in RAW264.7 cells. Targeting IKKβ by SC-514 may be a potential treatment for osteoclast-related disorders such as osteoporosis and cancer-induced bone loss.

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	100	445.83

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.46 mL	22.29 mL	44.58 mL
5 mM	0.89 mL	4.46 mL	8.92 mL
10 mM	0.45 mL	2.23 mL	4.46 mL
50 mM	0.09 mL	0.45 mL	0.89 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

- Liu Q, Wu H, Chim SM, Zhou L, Zhao J, Feng H, Wei Q, Wang Q, Zheng MH, Tan RX, Gu Q, Xu J, Pavlos N, Tickner J, Xu J. SC-514, a selective inhibitor of IKKβ attenuates RANKL-induced osteoclastogenesis and NF-κB activation. *Biochem Pharmacol*. 2013 Dec 15;86(12):1775-83. doi: 10.1016/j.bcp.2013.09.017. Epub 2013 Sep 30. PMID: 24091016.
- Kishore N, Sommers C, Mathialagan S, Guzova J, Yao M, Hauser S, Huynh K, Bonar S, Mielke C, Albee L, Weier R, Graneto M, Hanau C, Perry T, Tripp CS. A selective IKK-2 inhibitor blocks NF-kappa B-dependent gene expression in interleukin-1 beta-stimulated synovial fibroblasts. *J Biol Chem*. 2003 Aug 29;278(35):32861-71. doi: 10.1074/jbc.M211439200. Epub 2003 Jun 17. PMID: 12813046.

In vivo study

- Tse AK, Chen YJ, Fu XQ, Su T, Li T, Guo H, Zhu PL, Kwan HY, Cheng BC, Cao HH, Lee SK, Fong WF, Yu ZL. Sensitization of melanoma cells to alkylating agent-induced DNA damage and cell death via orchestrating oxidative stress and IKKβ inhibition. *Redox Biol*. 2017 Apr;11:562-576. doi: 10.1016/j.redox.2017.01.010. Epub 2017 Jan 12. PMID: 28107677; PMCID: PMC5247288.
- Johnson J, Shi Z, Liu Y, Stack MS. Inhibitors of NF-kappaB reverse cellular invasion and target gene upregulation in an experimental model of aggressive oral squamous cell carcinoma. *Oral Oncol*. 2014 May;50(5):468-77. doi: 10.1016/j.oraloncology.2014.02.004. Epub 2014 Feb 28. PMID: 24582884; PMCID: PMC4001858.

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7. Bioactivity

Biological target:

SC-514 is a selective IKK-2 inhibitor (IC₅₀=11.2 μM), which does not inhibit other IKK isoforms or other serine-threonine and tyrosine kinases.

In vitro activity

SC-514 is a potential treatment for osteoclast-related disorders, such as osteoporosis. SC-514 dose-dependently inhibits RANKL-induced osteoclastogenesis. At high concentrations, SC-514 induced apoptosis and caspase 3 activation in RAW264.7 cells. SC-514 impairs RANKL-induced osteoclastogenesis and NF-κB activation.

Reference: Biochem Pharmacol. 2013 Dec 15;86(12):1775-83. <https://pubmed.ncbi.nlm.nih.gov/24091016/>

In vivo activity

The combination of SC-514 with nitrosoureas has potential for melanoma therapy. In a xenograft mouse model, SC-514 cooperated with nitrosourea to reduce metastatic melanoma tumor size and malignancy in vivo.

Reference: Redox Biol. 2017 Apr;11:562-576. <https://pubmed.ncbi.nlm.nih.gov/28107677/>

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.