# Product data sheet

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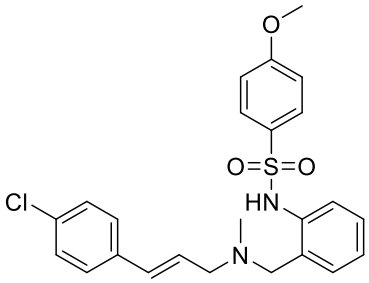
|---|---|
| MedKoo Cat#: 530547<br>Name: KN-92 free base<br>CAS: 176708-42-2 (free base)<br>Chemical Formula: $C_{24}H_{25}ClN_2O_3S$<br>Exact Mass: 456.1274<br>Molecular Weight: 456.985 | |
| Product supplied as: | Powder |
| Purity (by HPLC): | ≥ 98% |
| Shipping conditions | Ambient temperature |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. |
| | In solvent: -80°C 3 months; -20°C 2 weeks. |




**1. Product description:**
KN-92 is an inactive analog of the CaM kinase II inhibitor KN 93.

**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 |
|---|---|---|
| TBD | TBD | TBD |

**4. Stock solution preparation table:**

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.19 mL | 10.94 mL | 21.88 mL |
| 5 mM | 0.44 mL | 2.19 mL | 4.38 mL |
| 10 mM | 0.22 mL | 1.09 mL | 2.19 mL |
| 50 mM | 0.04 mL | 0.22 mL | 0.44 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. An P, Zhu JY, Yang Y, Lv P, Tian YH, Chen MK, Luo HS. KN-93, a specific inhibitor of CaMKII inhibits human hepatic stellate cell proliferation in vitro. World J Gastroenterol. 2007 Mar 7;13(9):1445-8. doi: 10.3748/wjg.v13.i9.1445. PMID: 17457979; PMCID: PMC4146932.

2. Smyth JT, Abbott AL, Lee B, Sienaert I, Kasri NN, De Smedt H, Ducibella T, Missiaen L, Parys JB, Fissore RA. Inhibition of the inositol trisphosphate receptor of mouse eggs and A7r5 cells by KN-93 via a mechanism unrelated to Ca2+/calmodulin-dependent protein kinase II antagonism. J Biol Chem. 2002 Sep 20;277(38):35061-70. doi: 10.1074/jbc.M202928200. Epub 2002 Jul 16. PMID: 12121980.

In vivo study

1. Liu Y, Shao Q, Cheng HJ, Li T, Zhang X, Callahan MF, Herrington D, Kitzman D, Zhao D, Cheng CP. Chronic Ca2+/Calmodulin-Dependent Protein Kinase II Inhibition Rescues Advanced Heart Failure. J Pharmacol Exp Ther. 2021 Jun;377(3):316-325. doi: 10.1124/jpet.120.000361. Epub 2021 Mar 15. PMID: 33722881; PMCID: PMC8140392.

2. Kong L, Xiong F, Sun N, Xu C, Chen Y, Yang J, Su X. CaMKIIδ inhibition protects against myocardial ischemia/reperfusion injury: Role of Beclin-1-dependent autophagy. Eur J Pharmacol. 2020 Nov 5;886:173539. doi: 10.1016/j.ejphar.2020.173539. Epub 2020 Sep 9. PMID: 32918874.

# Product data sheet

**7. Bioactivity**

Biological target:

KN-92 is an inactive derivative of KN-93, without CaM kinase inhibitory activity.

In vitro activity

However, KN-92, an inactive derivative of KN-93, did not inhibit cell proliferation effectively. Moreover, analysis of cell cycle regulator expression revealed that KN-93 rather than KN-92 reduced the expression of p53 and p21.

Reference: World J Gastroenterol. 2007 Mar 7;13(9):1445-8. https://pubmed.ncbi.nlm.nih.gov/17457979/

In vivo activity

KN-93 treatment preserved rat normal myocyte contraction, relaxation, [Ca2+]iT, and β-adrenergic reserve, whereas KN-92 treatment failed to improve LV and myocyte function, and plasma norepinephrine remained high in CHF.

Reference: J Pharmacol Exp Ther. 2021 Jun;377(3):316-325. https://pubmed.ncbi.nlm.nih.gov/33722881/

*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.*