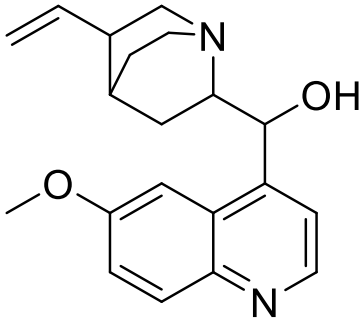
Product data sheet

MedKoo Cat#: 318602 Name: Quinidine (free base) CAS: 56-54-2 (free base) Chemical Formula: $C_{20}H_{24}N_2O_2$ Exact Mass: 324.1838 Molecular Weight: 324.42	
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:
Quinidine (free base) is a dextrorotatory stereoisomer of quinine with antimalarial and antiarrhythmic properties.

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	32.44	100

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.08	15.41	30.82
5 mM	0.62	3.08	6.16
10 mM	0.31	1.54	3.08
50 mM	0.06	0.31	0.62

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. Clark AP, Wei S, Kalola D, Krogh-Madsen T, Christini DJ. An in silico-in vitro pipeline for drug cardiotoxicity screening identifies ionic pro-arrhythmia mechanisms. Br J Pharmacol. 2022 Oct;179(20):4829-4843. doi: 10.1111/bph.15915. Epub 2022 Jul 24. Erratum in: Br J Pharmacol. 2023 Mar;180(6):786-788. PMID: 35781252; PMCID: PMC9489646.
2. Turnheim K, Plass H, Wyskovsky W. Basolateral potassium channels of rabbit colon epithelium: role in sodium absorption and chloride secretion. Biochim Biophys Acta. 2002 Feb 18;1560(1-2):51-66. doi: 10.1016/s0005-2736(01)00456-4. PMID: 11958775.

In vivo study

1. Xu D, Chen S, Yang J, Wang X, Fang Z, Li M. Precision therapy with quinidine of KCNT1-related epileptic disorders: A systematic review. Br J Clin Pharmacol. 2022 Dec;88(12):5096-5112. doi: 10.1111/bcp.15479. Epub 2022 Sep 20. PMID: 35940594.
2. Han L, Jia Y, Zhao Y, Sun C, Zhao M, Peng Y, Zheng J. Metabolic activation of zolmitriptan mediated by CYP2D6. Xenobiotica. 2021 Nov;51(11):1292-1302. doi: 10.1080/00498254.2021.1938290. Epub 2021 Nov 3. PMID: 34096834.

7. Bioactivity
Biological target:

Quinidine is a potent, orally active, selective cytochrome P450db inhibitor. Quinidine is also a K+ channel blocker with an IC50 of 19.9 μM, and can induce apoptosis.

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In vitro activity

Before advancing to clinical trials, new drugs are screened for their pro-arrhythmic potential. Significant AP prolongation (a pro-arrhythmia marker) was seen in response to quinidine. This study developed an in silico-in vitro pipeline that identifies pro-arrhythmia risk and mechanism of ion channel-blocking drugs. It offers a new tool for evaluating cardiotoxicity during preclinical drug screening.

Reference: Br J Pharmacol. 2022 Oct;179(20):4829-4843. https://pubmed.ncbi.nlm.nih.gov/35781252/

In vivo activity

Zolmitriptan (ZOL), a member of triptans, has been used for the treatment of migraine with definite therapeutic effects. However, there have been several reported cases of ZOL-associated liver injury, and its underlying mechanisms remain unclear. Pre-treatment of ZOL-treated rat primary hepatocytes with quinidine was able to reverse ZOL-induced cytotoxicity.

Reference: Xenobiotica. 2021 Nov;51(11):1292-1302. https://pubmed.ncbi.nlm.nih.gov/34096834/

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.