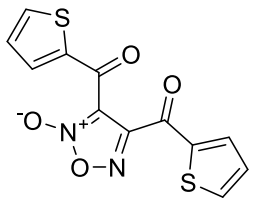
Product data sheet

MedKoo Cat#: 531948 Name: HC-056456 CAS#: 7733-96-2 Chemical Formula: $C_{12}H_6N_2O_4S_2$ Exact Mass: 305.9769 Molecular Weight: 306.31	
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:
HC-056456 is a CatSper channel modulator.

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	150.0	489.70

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.26 mL	16.32 mL	32.65 mL
5 mM	0.65 mL	3.26 mL	6.53 mL
10 mM	0.33 mL	1.63 mL	3.26 mL
50 mM	0.07 mL	0.33 mL	0.65 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

N/A

In vivo study

1. Carlson AE, Burnett LA, del Camino D, Quill TA, Hille B, Chong JA, Moran MM, Babcock DF. Pharmacological targeting of native CatSper channels reveals a required role in maintenance of sperm hyperactivation. PLoS One. 2009 Aug 31;4(8):e6844. doi: 10.1371/journal.pone.0006844. PMID: 19718436; PMCID: PMC2729922.

7. Bioactivity
Biological target:

HC-056456 is a blocker of CatSper channels.

In vitro activity

N/A

In vivo activity

The CatSper channel is the predominant route for evoked Ca2+ entry into intact mouse sperm. Compound HC-056456 was identified as a potential inhibitor of CatSper in a chemical-library screenThe efficacy of HC-056456 to inhibit evoked Ca2+ entry was examined. In Figs. 3A–C, fura-2 reported the spatially-averaged [Ca2+]i of sperm during challenge with a paired-stimulus protocol. Medium

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K8.6 evoked averaged rates of rise of 8.7 and 6.6 nM Δ[Ca2+]i s−1 during the first and second stimuli when no inhibitor was present. When 3 µM HC-056456 was applied after the first stimulus, the averaged rate decreased from ∼7.5 to ∼1.6 nM Δ[Ca2+]i s−1. When 10 µM HC-056456 was applied after the first stimulus, the averaged rate decreased more strongly, from ∼7.0 to ∼0.7 nM Δ[Ca2+]i s−1. Hence HC-056456 is an effective inhibitor of the CatSper Ca2+ channel activity that is evoked by alkaline depolarization. Fig. 3D shows that at 10 µM the HC-056456 also strongly decreased the rise in [Na+]i that was evoked by removal of external Ca2+. The rates of rise before and during exposure to HC-056456 were ∼0.03 and ∼0.01 ΔRSBFI min−1.

Reference: PLoS One. 2009; 4(8): e6844. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2729922/

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.