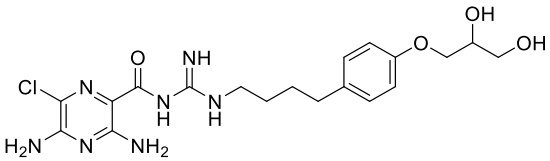
Product data sheet

MedKoo Cat#: 530110 Name: P552-02 free base CAS: 587879-32-1 (free base) Chemical Formula: $C_{19}H_{26}ClN_7O_4$ Exact Mass: 451.1735 Molecular Weight: 451.912	
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:
P552-02, also known as KM-003, PS 552-02, or 552-02, is a sodium channel blocker potentially for the treatment of cystic fibrosis.

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	2.21 mL	11.06 mL	22.13 mL
5 mM	0.44 mL	2.21 mL	4.43 mL
10 mM	0.22 mL	1.11 mL	2.21 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. Coote KJ, Paisley D, Czarnecki S, Tweed M, Watson H, Young A, Sugar R, Vyas M, Smith NJ, Baettig U, Groot-Kormelink PJ, Gosling M, Lock R, Ethell B, Williams G, Schumacher A, Harris J, Abraham WM, Sabater J, Poll CT, Faller T, Collingwood SP, Danahay H. NVP-QBE170: an inhaled blocker of the epithelial sodium channel with a reduced potential to induce hyperkalaemia. Br J Pharmacol. 2015 Jun;172(11):2814-26. doi: 10.1111/bph.13075. Epub 2015 Apr 23. PMID: 25573195; PMCID: PMC4439877.

In vivo study

1. Coote KJ, Paisley D, Czarnecki S, Tweed M, Watson H, Young A, Sugar R, Vyas M, Smith NJ, Baettig U, Groot-Kormelink PJ, Gosling M, Lock R, Ethell B, Williams G, Schumacher A, Harris J, Abraham WM, Sabater J, Poll CT, Faller T, Collingwood SP, Danahay H. NVP-QBE170: an inhaled blocker of the epithelial sodium channel with a reduced potential to induce hyperkalaemia. Br J Pharmacol. 2015 Jun;172(11):2814-26. doi: 10.1111/bph.13075. Epub 2015 Apr 23. PMID: 25573195; PMCID: PMC4439877.
2. Blé FX, Cannet C, Collingwood S, Danahay H, Beckmann N. ENaC-mediated effects assessed by MRI in a rat model of hypertonic saline-induced lung hydration. Br J Pharmacol. 2010 Jun;160(4):1008-15. doi: 10.1111/j.1476-5381.2010.00747.x. PMID: 20590595; PMCID: PMC2936005.

7. Bioactivity
Biological target:

P552-02, also known as KM-003, PS 552-02, or 552-02, is a sodium channel blocker potentially for the treatment of cystic fibrosis.

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In vitro activity

Amiloride and P552-02 likewise attenuated ENaC function across species with potency values, comparable to published data (Coote et al., 2008; Hirsh et al., 2008).

Reference: Br J Pharmacol. 2015 Jun;172(11):2814-26. https://pubmed.ncbi.nlm.nih.gov/25573195/

In vivo activity

Subsequent dose–response studies using either amiloride (Figure 3A) or 552-02 (Figure 3B), a recently described, potent ENaC blocker (Hirsh et al., 2008), confirmed the initial observations of the enhanced lung fluid volumes. These data suggest that 552-02 is approximately 30-fold more potent than amiloride in vivo, consistent with previous reports in rodent airways (Coote et al., 2008).

Reference: Br J Pharmacol. 2010 Jun;160(4):1008-15. https://pubmed.ncbi.nlm.nih.gov/20590595/