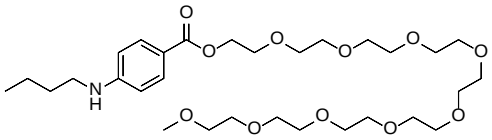
Product data sheet

MedKoo Cat#: 329304 Name: Benzonatate CAS: 104-31-4 (free base) Chemical Formula: $C_{30}H_{53}NO_{11}$ Exact Mass: 603.3619 Molecular Weight: 603.75	
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:
Benzonatate, also known as Tessalon and KM-65, is a sodium channel protein antagonist. Benzonatate's mechanism of action is thought to be anesthesia of vagal sensory nerve fibers that mediate cough. Vagal sensory neurons highly express the Nav1.7 subtype of voltage-gated sodium channels, and inhibition of this channel inhibits the cough reflex.

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
DMF	50.0	82.82
DMSO	75.0	124.22
Ethanol	50.0	82.82
Ethanol:PBS (pH 7.2) (1:1)	0.5	0.83

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	1.66 mL	8.28 mL	16.56 mL
5 mM	0.33 mL	1.66 mL	3.31 mL
10 mM	0.17 mL	0.83 mL	1.66 mL
50 mM	0.03 mL	0.17 mL	0.33 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

Evans MS, Maglinger GB, Fletcher AM, Johnson SR. Benzonatate inhibition of voltage-gated sodium currents. Neuropharmacology. 2016 Feb;101:179-87. doi: 10.1016/j.neuropharm.2015.09.020. Epub 2015 Sep 16. PMID: 26386152.

In vivo study

TBD

7. Bioactivity
Biological target:

Benzonatate, also known as Tessalon and KM-65, is a sodium channel protein antagonist.

In vitro activity

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This study used whole cell voltage clamp recording to test the effects of benzonatate on voltage-gated sodium (Na(+)) currents in two murine cell lines, catecholamine A differentiated (CAD) cells, which express primarily Nav1.7, and N1E-115, which express primarily Nav1.3. This study found that, like local anesthetics, benzonatate strongly and reversibly inhibits voltage-gated Na(+) channels.

Reference: Neuropharmacology. 2016 Feb;101:179-87. https://pubmed.ncbi.nlm.nih.gov/26386152/

In vivo activity

TBD

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.