



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

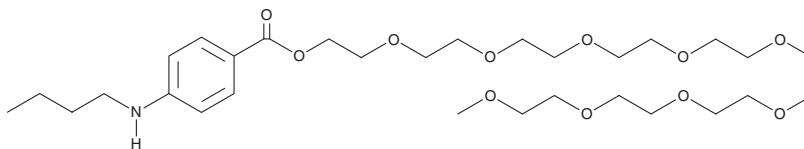
# PRODUCT INFORMATION



## Benzonate

Item No. 23936

**CAS Registry No.:** 104-31-4  
**Formal Name:** 4-(butylamino)-benzoic acid,  
3,6,9,12,15,18,21,24,27-  
nonaoxaoctacos-1-yl ester  
**MF:** C<sub>30</sub>H<sub>53</sub>NO<sub>11</sub>  
**FW:** 603.8  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 231, 310 nm  
**Supplied as:** A solution in ethanol  
**Storage:** -20°C  
**Stability:** ≥1 year



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Benzonate is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of benzonate in these solvents is approximately 50 mg/ml.

Benzonate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of benzonate should be diluted with the aqueous buffer of choice. Benzonate has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method.

### Description

Benzonate is a reversible voltage-gated sodium channel blocker.<sup>1</sup> It blocks Na<sub>v</sub>1.7 currents in a concentration- and voltage-dependent manner (IC<sub>50</sub>s = 5.9 and 1.4 μM at holding potentials of -100 and -70 mV, respectively) and inhibits action potential firing in catecholamine A differentiated (CAD) cells. Benzonate also blocks 80% of Na<sub>v</sub>1.3 currents in N1E-115 cells when used at a concentration of 100 μM. *In vivo*, benzonate (0.85 mg/min) reduces the frequency, but has no effect on the amplitude, of the cough reflex in anesthetized dogs.<sup>2</sup> Formulations containing benzonate have been used as antitussive agents for the treatment of coughs.

### References

1. Evans, M.S., Maglinger, G.B., and Fletcher, A.M. Benzonate inhibition of voltage-gated sodium currents. *Neuropharmacology* **101**, 179-187 (2016).
2. Yanaura, S., Hosokawa, T., Kitagawa, H., et al. Effects of peripheral airway response on the cough reflex (author's transl). *Nihon Yakurigaku Zasshi*. **76(8)**, 709-716 (1980).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM