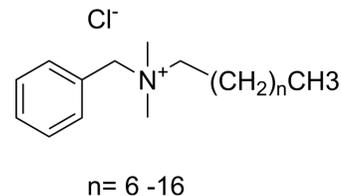


Benzalkonium chloride

Cat. No.:	HY-B2232
CAS No.:	8001-54-5
Molecular Formula:	C ₆ H ₅ CH ₂ N(CH ₃) ₂ RCl (R=C ₈ H ₁₇ to C ₁₈ H ₃₇)
Target:	Bacterial
Pathway:	Anti-infection
Storage:	Solution, -20°C, 2 years



SOLVENT & SOLUBILITY

In Vitro	<p>Ethanol : 50 mg/mL (Need ultrasonic)</p> <p>DMSO : 50 mg/mL (Need ultrasonic)</p> <p>H₂O : ≥ 20 mg/mL</p> <p>* "≥" means soluble, but saturation unknown.</p>
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: PBS Solubility: 50 mg/mL (Infinity mM); Clear solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 3.25 mg/mL (Infinity mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 3.25 mg/mL (Infinity mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 3.25 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Benzalkonium chloride is a potent anti-microbial agent, used as a preservative in eye drops.
In Vitro	<p>Benzalkonium chloride (0.0001%-0.5%) results in a dose-dependent cytotoxicity in cells. Benzalkonium chloride also shows cytotoxicity against human keratinocytes, with 50% loss of viability of 4 μM. Benzalkonium chloride shows different results in NHEK and NB1RGB cell cultures, and the ED₅₀ of 3.9 and 62 μM, respectively. The clinically used concentration (0.01% Benzalkonium chloride) significantly reduces cell viability, with only 14%-19% of nasal epithelial cells surviving the treatment^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Benzalkonium chloride (0.02%) causes no abnormalities in the nasal epithelium of the monkeys after light and electron microscopical examination. In 4-5 week-old SD rats, 0.01% and 0.1% Benzalkonium chloride induce a time-dependent increase in the thickness of the nasal respiratory epithelium^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Acs Biomater Sci Eng. 2022 Oct 10.

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REFERENCES

[1]. Johnson NF. Pulmonary Toxicity of Benzalkonium Chloride. J Aerosol Med Pulm Drug Deliv. 2017 Jul 6.

Caution: Product has not been fully validated for medical applications. For research use only.

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