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2,13-Dibenzyl-5,16-diethyl-2,6,13,17-tetraazatricyclo[16.4.0.0^{7,12}]docosan-2-ium nitrate

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Abstract: One of the tertiary amine atoms has been protonated in the title salt, $C_{36}H_{57}N_4^+ \cdot NO_3^-$. The four N atoms of the macrocycle are almost coplanar (r.m.s. deviation = 0.0053 Å), a result correlated with the formation of intramolecular N-H...N and N-H...N(N,N) hydrogen bonds. With respect to this plane, the benzyl groups lie to either side; a similar arrangement pertains for the cyclohexyl rings (each with a chair conformation). Helical supramolecular chains are evident in the crystal, whereby alternating cations and anions are linked by C-H...O interactions. The chains are consolidated into supramolecular arrays in the *ab* plane via C-H...π contacts involving both benzene rings.