

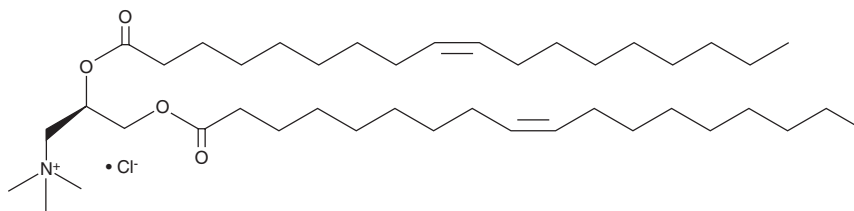
# PRODUCT INFORMATION



## 1,2-Dioleoyl-3(R)-trimethylammoniumpropane (chloride)

Item No. 38194

**CAS Registry No.:** 328250-28-8  
**Formal Name:** N,N,N-trimethyl-2R,3-bis[[[(9Z)-1-oxo-9-octadecen-1-yl]oxy]-1-propanaminium, monochloride  
**Synonym:** R-DOTAP  
**MF:**  $C_{42}H_{80}NO_4 \cdot Cl$   
**FW:** 698.5  
**Purity:**  $\geq 95\%$   
**Supplied as:** A solid  
**Storage:**  $-20^{\circ}C$   
**Stability:**  $\geq 4$  years



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

### Laboratory Procedures

1,2-Dioleoyl-3(R)-trimethylammoniumpropane (R-DOTAP) (chloride) is supplied as a solid. A stock solution may be made by dissolving the R-DOTAP (chloride) in the solvent of choice, which should be purged with an inert gas. R-DOTAP (chloride) is soluble in organic solvents such as ethanol and dimethyl formamide. The solubility of R-DOTAP (chloride) in these solvents is approximately 16 and 3 mg/ml, respectively.

### Description

R-DOTAP is a cationic lipid and the more immunologically active isomer of DOTAP (Item No. 15110).<sup>1,2</sup> Lipoplexes containing R-DOTAP and encapsulating siRNA targeting the gene encoding aromatase, CYP19A1, decrease aromatase activity in MCF-7 breast cancer cells.<sup>1</sup> Vaccination with a peptide epitope from human papillomavirus (HPV) 16 protein E7 in R-DOTAP-containing liposomes induces IFN- $\gamma$  production by CD8<sup>+</sup> T cells and tumor-infiltrating lymphocytes (TILs) and decreases tumor size in a murine cervical cancer model.<sup>2</sup> Subcutaneous immunization with recombinant influenza B hemagglutinin using R-DOTAP as an adjuvant increases IL-2 and IFN- $\gamma$  production in CD4<sup>+</sup> T cells isolated from mouse draining lymph nodes and spleen.<sup>3</sup>

### References

1. Terp, M.C., Bauer, F., Sugimoto, Y., *et al.* Differential efficacy of DOTAP enantiomers for siRNA delivery in vitro. *Int. J. Pharm.* **430**(1-2), 328-334 (2012).
2. Vasievich, E.A., Chen, W., and Huang, L. Enantiospecific adjuvant activity of cationic lipid DOTAP in cancer vaccine. *Cancer Immunol. Immunother.* **60**(5), 629-638 (2011).
3. Henson, T.R., Richards, K.A., Gandhapudi, S.K., *et al.* R-DOTAP cationic lipid nanoparticles outperform squalene-based adjuvant systems in elicitation of CD4 T cells after recombinant influenza hemagglutinin vaccination. *Viruses* **15**(2), 538 (2023).

#### 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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