

PRODUCT INFORMATION



CAP 2 (hydrochloride)

Item No. 38315

Formal Name: bis((3S,8S,9S,10R,13R,14S,17R)-10,13-dimethyl-17-((R)-6-methylheptan-2-yl)-2,3,4,7,8,9,10,11,12,13,14,15,16,17-tetradecahydro-1H-cyclopenta[a]phenanthren-3-yl) (3-(dimethylamino)propyl) phosphate, monohydrochloride

Synonyms: CAP 2-4, Cholesterol-Amino-Phosphate 2

MF: C₅₉H₁₀₂NO₄P • HCl

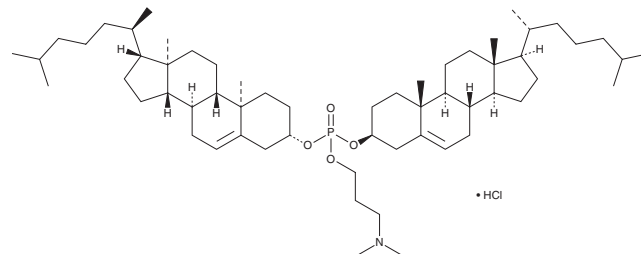
FW: 956.9

Purity: ≥95%

Supplied as: A solid

Storage: -20°C

Stability: ≥3 years



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

Laboratory Procedures

CAP 2 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the CAP 2 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. CAP 2 (hydrochloride) is sparingly soluble (1-10 mg/ml) in chloroform.

Description

CAP 2 is an ionizable cationic lipid composed of two cholesterol moieties connected *via* a phosphate linker that contains an amino head group.¹ It has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA or self-amplifying RNA (saRNA) *in vivo*. It has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA or self-amplifying RNA (saRNA) *in vivo*. LNPs containing CAP 2 and encapsulating saRNA encoding DNA meiotic recombinase 1 (Dmc1) increase Dmc1 levels in seminiferous tubules for a longer period of time than equivalent LNPs encapsulating Dmc1 mRNA in a *Dmc1*^{-/-} mouse model of male infertility. LNPs containing CAP 2 and encapsulating saRNA encoding Dmc1 increase the percentage of morphologically mature spermatocytes, thickness of the geminate layer, and diameter of the seminiferous tubes in the same mice. Sperm isolated from mice administered these LNPs produced viable embryos with isolated mouse oocytes.

Reference

1. Du, S., Li, W., Zhang, Y., *et al.* Cholesterol-amino-Phosphate (CAP) derived lipid nanoparticles for delivery of self-amplifying RNA and restoration of spermatogenesis in infertile mice. *Adv. Sci. (Weinh)* **10(11)**, e2300188 (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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