

DOTAP Chloride

Catalog Number: 14475

INTRODUCTION

DOTAP Chloride is a cationic lipid used in the formation of liposomes, lipid nanoparticles and related nanodelivery systems. It is widely used as a critical ingredient for gene therapy development.

SPECIFICATIONS:

Synonym(s):

1,2-dioleoyl-3-trimethylammonium-propane, chloride;

DOTAP Chloride; DOTAP Cl; DOTAP

Linear Formula: $C_{42}H_{80}ClNO_4$

CAS Number:	132172-61-3
Purity:	≥ 99%
Molecular Weight:	698.55
Appearance:	Solid, powder
Storage:	-20°C

LIPOSOME SYNTHESIS PROTOCOL

MATERIALS:

- DOTAP Chloride (Polysciences Cat. No. 14475)
- Dry Nitrogen or Argon
- Purified H₂O
- Chloroform (Optional)

EQUIPMENT:

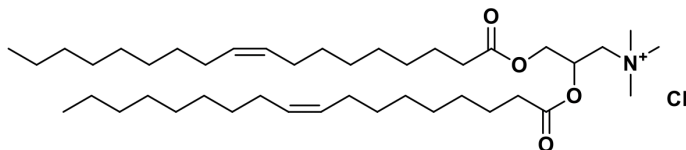
- 5 mL Glass beaker
- Glass round bottom flask
- Rotary evaporator
- Sterile PES filter (0.1-0.2 μm)
- Sterile polystyrene storage tube
- Pipette controller and tips (100 μl)
- Calibrated scale
- Laminar flow hood with vacuum
- Mini extruder, 100 nm membrane
- Block heater

PREPARE STOCK SOLUTION:

1. Remove DOTAP Cl from freezer (-20 °C) and thaw to room temperature
2. Weigh 18 mg of DOTAP Cl into glass vial
3. Add 1 mL filtered H₂O or 1 mL of chloroform to the glass vial; agitate until dissolved
4. (Optional: Incubate at 37 °C for 10 minutes to facilitate homogenization)
5. (Optional: Store stock solution at -20 °C under nitrogen or argon)

SAFETY

See Safety Data Sheet



PREPARATION OF LIPID FILM:

1. Place stock solution in round bottom flask and remove solvent using a rotary evaporator
2. Evaporate chloroform with dry nitrogen flow in fume hood
3. Place vial in vacuum pump until lipid film is created (~2-3 hours)

REHYDRATION AND EXTRUSION:

1. Add 1 mL filtered H₂O to lipid film
 - a. Warm to 37 °C for 10-30 minutes for homogenization; gently vortex as needed
 - b. Sonicate 2-5x for 1 minute with 1-minute intervals in between
2. Prepare mini extruder while mixing:
 - a. Warm heating block to 30 °C
 - b. Assemble the extruder with membrane, lubricate with 1 mL filtered H₂O, then discard H₂O
3. Extract 1 mL of solution with glass syringe and pass through extruder 11 times
4. Store suspension in glass vial under nitrogen or argon at 4 °C until use, up to 1 month

ORDERING INFORMATION

Cat. #	Description
14475	DOTAP Chloride

Visit [Polysciences.com](https://www.polysciences.com) any time to place an order.

Contact us at info@polysciences.com to learn about our cGMP grade DOTAP Chloride manufactured under 21 CFR part 210, 211.