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Product Information

Liposome Kit: Lipid mixtures for the preparation of liposomes

Catalog Number **L4395**
Storage Temperature –20 °C

Product Description

Liposome Kit: Lipid mixtures is a lyophilized powder, which contains: cholesterol, L-α-phosphatidylcholine, and stearylamine. This lipid mixture may be used to prepare cationic (positively charged) liposomes for incorporation of materials into cells.

Liposomes can be used for different applications such as drug delivery, diagnostics, membrane models, adjuvants for vaccination, and others.

This lipid mixture can be used to encapsulate a broad spectrum of hydrophilic and amphipathic molecules of low, medium, and high molecular weight (including peptides, proteins, and oligo- and polynucleotides).

T_m is the temperature at which maximum change in heat capacity of the gel to liquid crystalline phase transition occurs. The T_m of this lipid mixture has not been determined but is assumed to be approximately the same value as for the T_m of the major component L-α-phosphatidylcholine from egg yolk (–15 to –17 °C).[1]

Components

The purity of each component is ~99%.

L-α-phosphatidylcholine (egg yolk)	63 µmoles/vial
Stearylamine	18 µmoles/vial
Cholesterol	9 µmoles/vial

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the lyophilized powder at –20 °C.

After reconstitution the liposome suspension is stable at 4 °C for at least 7 days

Procedures

A. To prepare liposomes, add 1 ml of an aqueous solution containing the solute to be encapsulated into the vial at the desired temperature (>4 °C) and mix well by vortexing for 30 seconds. A homogenous milky suspension should result.
Note: For some solutes encapsulation can be further improved by extra agitation for 30 minutes at the desired temperature.

B. Alternatively, if solute to be encapsulated is scarce, hydration can be performed in two stages:
   1. Add 0.2–0.3 ml of the aqueous solution, which contains the molecules to be encapsulated, and vortex well.
   2. Add an additional 0.7 ml of the aqueous medium only.

C. Hydrophobic materials can be incorporated as follows:
   1. Dissolve material at high concentration in an organic solvent such as DMSO or ethanol.
   2. Transfer 1–10 µl of this solution into the vial.
   3. Add 0.2 ml of aqueous medium.
   4. Vortex well at room temperature.
   5. Add an additional 0.8 ml of aqueous medium.
   6. Agitate for 30 minutes.

   The organic solvent should be <1% of the final volume. If needed, it can be removed by gel filtration or dialysis.

The size of liposomes can be decreased using ultrasonic irradiation or extrusion.

References

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5. Barenholz, Y., and Amsalem, S., Quality Control assays in the development and clinical use of Liposome formulations in: "Liposome Technology", 2nd Edition (Gregoriadis, G., ed.) CRC Press, Boca Raton, FL, 517-616, (1993).
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