

Doxosome™-Doxorubicin Liposomes (Non-PEGylated) for Post-insertion

DESCRIPTION

For most surface reactive liposome formulations, the reactive lipid is incorporated into the liposomes and the ligand, protein or peptide is conjugated directly to the liposomes that contain reactive lipids. However, this strategy might not work if the reactive lipid is prone to hydrolysis such as maleimide or NHS lipid. In order to get around this issue, the liposomes are made without the PEGylated (reactive and non-reactive) lipids. The scientist who is planning to use the kit will conjugate the ligand, protein or peptide to the reactive lipid. Next, the buffer is added to the lipid-conjugated ligand and micelle solution is formed. Another micelle solution is formed after the PEGylated non-reactive lipid is hydrated with the buffer. The two micelle solutions are mixed and incubated together at a temperature above the liquid-to-gel phase transition temperature of the HSPC (saturated matrix lipid). The PEGylated lipids in the micelles insert themselves with a high efficiency (above 80%) to the liposomes and form the immunoliposomes.

FORMULATION INFORMATION

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Lipid Composition	Concentration (mg/ml)	Concentration (mM)	Molar Ratio Percentage
Hydrogenated Soy PC	11.5	14.7	60
Cholesterol	3.83	9.91	40
Total	15.33 mg/ml	24.61 mM	100

Buffers, Liposome Size and Encapsulated Drug Concentration	Specification
Inside Buffer	Ammonium Sulfate
Outside Buffer	Phosphate Buffered Saline
pH	7.4
Liposome Size	100 nm
Encapsulated Doxorubicin	2 mg/ml (3.45 mM)

APPEARANCE

Doxosome™ is a red translucent liquid made of nano size unilamellar liposomes. Usually, due to the small size of liposomes, no settling will occur in the bottom of the vial. The liposomes are packaged in an amber vial.

STORAGE AND SHELF LIFE

Storage

Doxosome™ products should always be stored at in the dark at 4 °C, except when brought to room temperature for brief periods prior to animal dosing. DO NOT FREEZE. If the suspension is frozen, the encapsulated drug can be released from the liposomes thus limiting its effectiveness. In addition, the size of the liposomes will also change upon freezing and thawing.

Shelf Life

Doxosome™ is made on daily basis. The batch that is shipped is manufactured on the same day. It is advised to use the products within 4 months of the manufacturing date.

REFERENCES AND BACKGROUND READING

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3. [*Grabarek Z, Gergely J. Zero-length crosslinking procedure with the use of active esters. Analytical biochemistry. 1990 Feb 15;185\(1\):131-5.*](#)

4. *Yan L, Crayton SH, Thawani JP, Amirshaghghi A, Tsourkas A, Cheng Z. A pH-Responsive Drug-Delivery Platform Based on Glycol Chitosan-Coated Liposomes. Small. 2015 Oct 1;11(37):4870-4.*
5. *Silva-López EI, Edens LE, Barden AO, Keller DJ, Brozik JA. Conditions for liposome adsorption and bilayer formation on BSA passivated solid supports. Chemistry and physics of lipids. 2014 Oct 31;183:91-9.*
6. *Hazra M, Singh SK, and Ray S. Surface Modification of Liposomal Vaccines by Peptide Conjugation. Journal of PharmaSciTech, 2011; 1(1): 41-47.*