Electronic Supplementary Information (ESI)

Cerasome versus liposome: A comparative pharmacokinetic analysis following intravenous administration into rats

1. Synthesis of Ag_2S Qds

The Ag_2S Qds were prepared based on the previous report (1) with a little modification. Briefly, 15 mg of AgNO3 was dissolved in 15 ml of a mixed solution of the glycerin and deionized water (1: 2 *v*/*v*) in an amber beaker. Then the system was heated to 100 ℃ and stirred at 800 rpm by a thermostatic magnetic stirrer (Heidolph Instruments, Germany) for 0.5 h. Next, 100 µl of thioglycolic acid was dropwise added (at a rate of 10 µl/min) to the previous Ag^+ solution. As soon as the first drop was added, the system's color rendered cloudy white, then gray, and finally clear yellow after 1 h. The color of Qds got reddish brown by continuing heating and stirring the system for 2 h. After cooling to room temperature, the prepared Qds was stored in an amber beaker at 4 ℃.

2. Synthesis of Cerasome Forming Lipid (CFL)

2.1 Synthesis of dihexadecylamine (the intermediate compound)

For synthesizing the intermediate of dihexadecylamine, hexadecylamine (246.6 mg, 1 mmol) was dissolved in 10 ml acetonitrile in a 50 ml round bottom balloon. Then hexadecylbromide (315 µl, 1 mmol) was added dropwise to the previous solution. Finally, the mixture was refluxed in an oil

bath at 80 °C for 6 hours. After cooling the mixture, the final product precipitates and the residual acetonitrile were removed by a Büchner funnel under avacuum.

For purification of the intermediate, the product was dissolved in CH_2Cl_2 and extracted twice with the mixture 15 ml 6 M NaOH. After evaporating the solvent, the precipitate was washed with 10 ml MeOH to remove the residual of hexadecylamine. For final purification, the washed precipitate was recrystallized from n-hexane to obtain a clear white powder (% Ra: % 44) (2-4).

2.2 Synthesis of CFL (the final product)

For synthesizing the CFL, 100 mg (0.21 mmol) of the n-dihexadecylamine (the intermediate product) and 56 µl (0.27 mmol) of 3-triethoxysilyl propylisocyanate were dissolved in 30 ml dichloromethane and refluxed in an oil bath at 60 °C for 5 hours. Finally, the solvent residual was evaporated to obtain the final colorless oil (3, 5).

References

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