SUPPLEMENTAL APPENDIX

Synthesis of dipalmitoylphosphatidyl D-serine

Dipalmitoylphosphatidyl D-serine was synthesized according to the procedure of Lindh and Stawińsky (*22*). To a solution of dipalmitoyl-glycero-H-phosphonate (515 mg, 0.813 mmol) and *N*-Boc-D-serine (332 mg, 1.62 mmol) in pyridine (8 mL) was added pivaloyl chloride (0.30 mL) at RT. The solution was stirred at RT for 1.5 hr and then was added iodine (413 mg, 1.62 mmol) in pyridine / water (98:2, v/v, 15 mL). The resulting mixture was stirred at RT for 30 min. Then chloroform (150 mL) was added, the organic phase was washed with 5% aqueous sodium bisulfate, and the aqueous phase was again washed with chloroform (150 mL). The combined organic phase was evaporated and the remaining pyridine was removed by evaporation of added toluene. The crude product was dissolved in dichloromethane (2 mL). Trifluoroacetic acid (1 mL) and 70% perchloric acid (1 mL) were added to this solution at 0 ^{o}C. The resulting mixture was stirred at 0 ^{o}C for 30 min and then was diluted by addition of water (4 mL), chloroform (4 mL) and methanol (1

mL). The organic phase was washed with 0.5 M sodium carbonate (2 x 3mL). The combined aqueous phases were extracted with chloroform (2 mL). The organic phases were combined and evaporated, and the residue was purified by silica gel chromatography to give dipalmitoyl-phosphatidyl-D-serine (116 mg) as a white solid.

Preparation of liposomes

Liposomes were prepared by the lipid film hydration-extrusion method (*23*). Briefly, the lipids were dissolved in chloroform and the solvent was evaporated. Molar ratios of lipids were DSPC:cholesterol = 2:1 for PC liposomes, and DSPC:DSPS:cholesterol = 1:1:1 for PS liposomes. The dried films were dispersed in 10 mM NTA (nitrilotriacetic acid) in 50 mM HEPES/5% mannitol buffer (pH 7.4) at 60 °C. The lipid dispersion was extruded 13 times through 0.2-μm polycarbonate filters to prepare 200 nm diameter liposomes. For 100 nm liposomes, dispersions were extruded 3 times through 0.2-μm polycarbonate filters, then 10 times through 0.1-μm polycarbonate filters. Liposomes were purified by Sephadex G-50 column

chromatography (GE Healthcare Japan Ltd., Tokyo, Japan) to remove the non-encapsulated NTA.

SPECT/CT imaging with WHHL rabbits

For SPECT/CT imaging, the rabbits were anesthetized with a bolus injection of sodium pentobarbital (30 mg/kg, i.v.) followed by continuous injection with propofol (10 mg/kg/hr, i.v.). [^{111}In]PS100 or [^{111}In]PS200 (74 MBq) was injected into a marginal ear vein, and SPECT scanning was carried out 48 hr post-injection of liposomes using an FX system PET/SPECT/CT scanner (64 frames, 60 sec/frame, Gamma-Medica Inc., USA) and high-resolution parallel hole collimators. A CT angiogram was acquired using iohexol as a contrast agent after the SPECT imaging.