Supplementary Information

Sialyl Lewis X Mimic-Decorated Liposomes for Anti-Angiogenic Everolimus Delivery to E-Selectin Expressing Endothelial Cells

Chanikarn Chantarasrivong, Yuriko Higuchi, Masahiro Tsuda, Yuuki Yamane, Mitsuru Hashida, Miku Konishi, Naoko Komura, Hiromune Ando and Fumiyoshi Yamashita

S1. Drug release from liposome formulations

The release of EVE from the liposome was evaluated by a dialysis method. In the preliminary experiment, the appearance of EVE in the outer buffer was not detected presumably because of its adsorption to the membrane, and therefore an inner sampling method[1,2] was adopted. Dialysis cassettes, Slide-A-Lyzer 7K MWCO (Thermo Scientific, Rockford, IL), were loaded with 1.5 mL of each liposome solution, and placed in 200 mL PBS under stirring condition at 37°C. At designated time points, a 50 µL sample was taken from the cassette, and replaced with an equal volume of fresh PBS to maintain the total volume. The samples were treated and quantified by LC-MS/MS in the same way as in the uptake experiment. The amount of EVE released was estimated from the decrease in concentration of EVE in the dialysis cassette.

Figure S1 shows the release of EVE from EVE/PEG- and EVE/3'-CE sLeX mimic liposomes. The release profiles were biphasic, with an initial burst release followed by a slower release. The initial-burst release of EVE appeared to be faster in EVE/3'-CE sLeX mimic liposomes than in EVE/PEG-liposomes. No further analysis on the release kinetics was conducted, because discrimination between liposome-associated and liberated drug molecules was not guaranteed by the inner sampling.

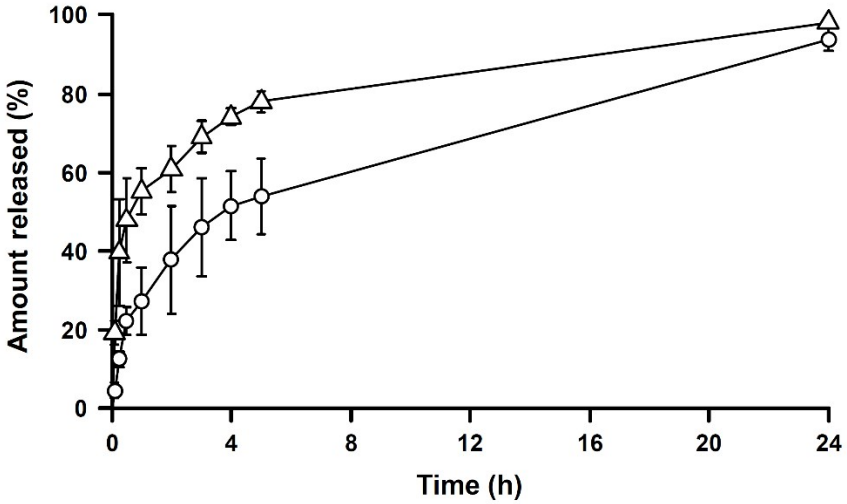

Figure S1. Release of EVE from the liposome formulations. Symbols: ○, EVE/PEG-liposomes; △, EVE/3'-CE sLeX mimic liposomes. Results are expressed as mean ± SD of three samples. Statistical significance was observed between any two of the time courses ($P<0.01$), using two-way ANOVA followed by the Tukey-Kramer's post hoc intergroup comparison test.

References

1) H.C. Shin et al., Multi-drug loaded polymeric micelles for simultaneous delivery of poorly soluble anticancer drugs. J. Control. Release. 140(3) (2009) 294-300.
2) G.P. Mishra et al., Antiangiogenic effect of docetaxel and everolimus as individual and dual-drug-loaded micellar nanocarriers. Pharm. Res. 31(3) (2014) 660-669.