Supporting Information

Preparation of Biodegradable Oligo(lactide)s-grafted Dextran Nanogels for Efficient Drug Delivery by Controlling Intracellular Traffic

Yuichi Ohya* 1,2, Akihiro Takahashi, 2 Akinori Kuzuya, 1,2

1 Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University, 3-3-35 Yamate, Suita, Osaka 564-8680, Japan.

2 Organizatin for Research and Development of Innovative Science and Technology (ORDIST), Kansai University, 3-3-35 Yamate, Suita, Osaka 564-8680, Japan.

*To whom correspondence should be addressed. yohya@kansai-u.ac.jp

Figure S1. 1H NMR spectra of a) activated OLA (CI-OLA), b) Boc-cystamine-OLA and c) OLA-SS-NH2 in CDCl3.

Figure S2. 1H NMR spectrum for hydrolysis products of EL4/Gal-Dex-g-SS-OLA in NaOD/D2O. The alkyl group at the terminal of OLA was not observed because of insolubility in aqueous solution.

Figure S3. Size distributions of the Dex-g-OLA, Dex-g-SS-OLA and EL4/Gal-Dex-g-SS-OLA nanogels in PB solution measured by DLS.

Figure S4. Plots of fluorescence intensity ratio for I1 (373 nm) to I3 (383 nm) peaks of pyrene as a function of Dex-g-SS-OLLA concentration in PB solution.
Figure S1. $^1$H NMR spectra of a) activated OLA (CI-OLA), b) Boc-cystamine-OLA and c) OLA-SS-NH$_2$ in CDCl$_3$. 
Figure S2. $^1$H NMR spectrum for hydrolysis products of EL$_4$/Gal-Dex-g-SS-OLA in NaOD/D$_2$O.

The alkyl group at the terminal of OLA was not observed because of insolubility in aqueous solution.
**Figure S3.** Size distributions of the Dex-g-OLA, Dex-g-SS-OLA and El₄/Gal-Dex-g-SS-OLA nanogels in PB solution measured by DLS.
Figure S4. Plots of fluorescence intensity ratio for $I_1$ (373 nm) to $I_3$ (383 nm) peaks of pyrene as a function of Dex-g-SS-OLLA concentration in PB solution.