Electronic Supplementary Material (ESI) for Nanoscale.

MicroRNA-mediated silence of onco-lncRNA MALAT1 in different ESCC cells via ligand-functionalized hydroxyl-rich nanovectors

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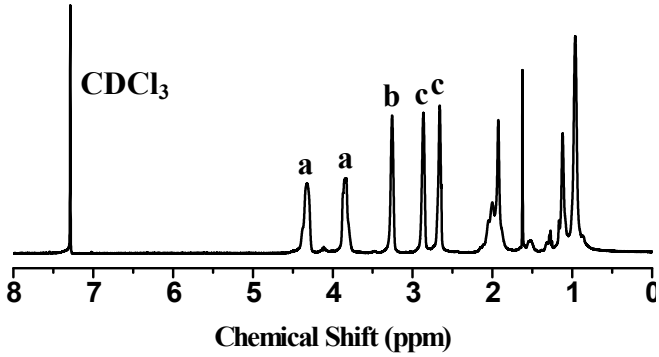
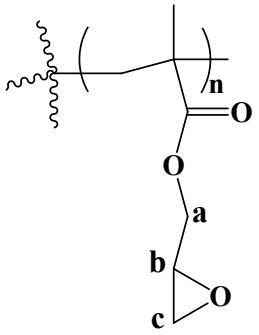
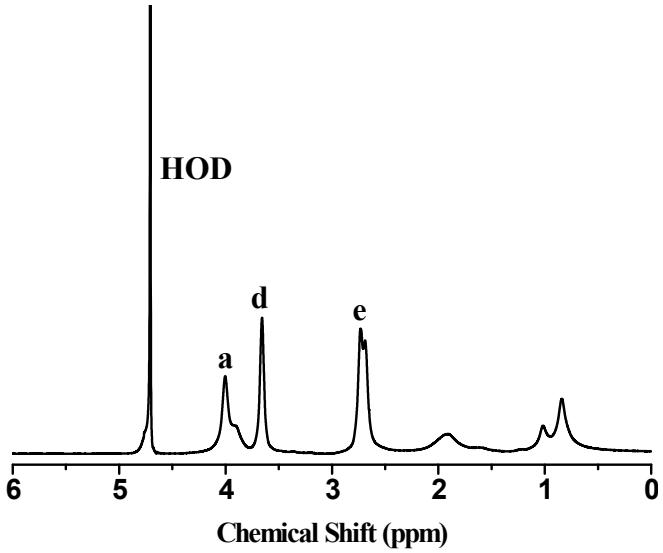
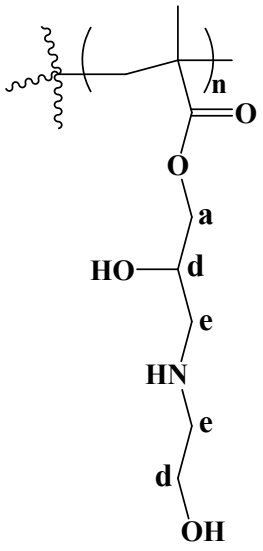
(a) s-PGMA





(b) s-PGEA





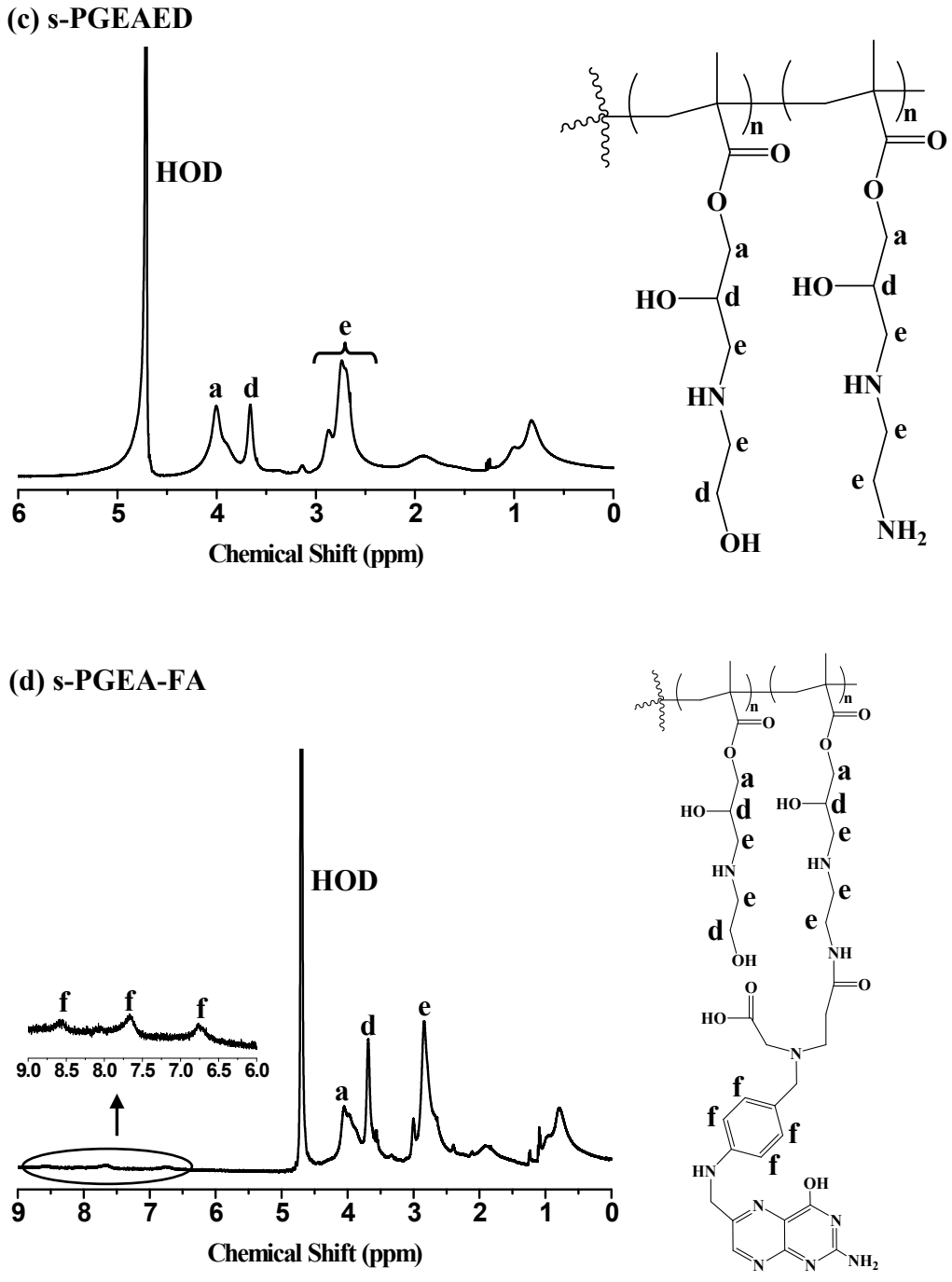


Figure S1. ^{1}H NMR spectra of (a) s-PGMA, (b) s-PGEA, (c) s-PGEAED, and (d) s-PGEA-FA.

The ^{1}H NMR spectrum of s-PGMA is shown in Fig. S1a. The peaks at 4.32 and 3.86 ppm belonged to the protons of methylene adjacent to the oxygen moieties of ester linkages (a, O=C-O-$\underline{CH_2}$-CH). The peak at 3.26 ppm was associated with the proton of methylidyne in the epoxy group (b, CH_2-$\underline{CH}$(O)-CH_2). The signals δ = 2.87 and 2.66 ppm were related to the protons of methylene in the epoxy group (c, CH_2-$\underline{CH}$(O)-$\underline{CH_2}$). The area ratio of peak a, b, and c was 2:1:2, indicating the intact epoxy groups during ATRP. Fig. S1b shows the chemical structure of s-PGEA synthesized through ring-opening reaction with EA. The signal at the scope of 3.78-4.30 was mainly (66.7%) associated with the protons of methylene adjacent to the ester linkage (a, O=C-O-$\underline{CH_2}$-CH) and partly (33.3%) associated with the proton of methylidyne adjacent to the hydroxyl group (d, CH_2-$\underline{CH}$(OH)-CH_2). The peak at 3.66 ppm was related to the protons of methylene adjacent to the hydroxyl group (d, CH_2-$\underline{CH_2}$-OH). The signal δ = 2.73 belonged to the protons of methylene adjacent to the secondary amine group (e, $\underline{CH_2}$-NH-$\underline{CH_2}$). Fig. S1c shows the chemical structure of s-PGEAED which was also prepared via ring-opening reaction with EA and ED. The signal at the scope of 2.40-3.00 ppm was related to the protons of methylene adjacent to amine groups (e, $\underline{CH_2}$-NH and $\underline{CH_2}$-NH_2). FA groups were introduced into s-PGEAED to prepare s-PGEA-FA via amidation reaction. As shown in Fig. S1d, the peaks at 8.58, 7.67, and 6.78 ppm were associated with the protons of benzene of FA residue. According to the area ratio of peak f and a (0.07:3), about 7% of repeat units had FA residues, indicating the successful preparation of s-PGEA-FA.

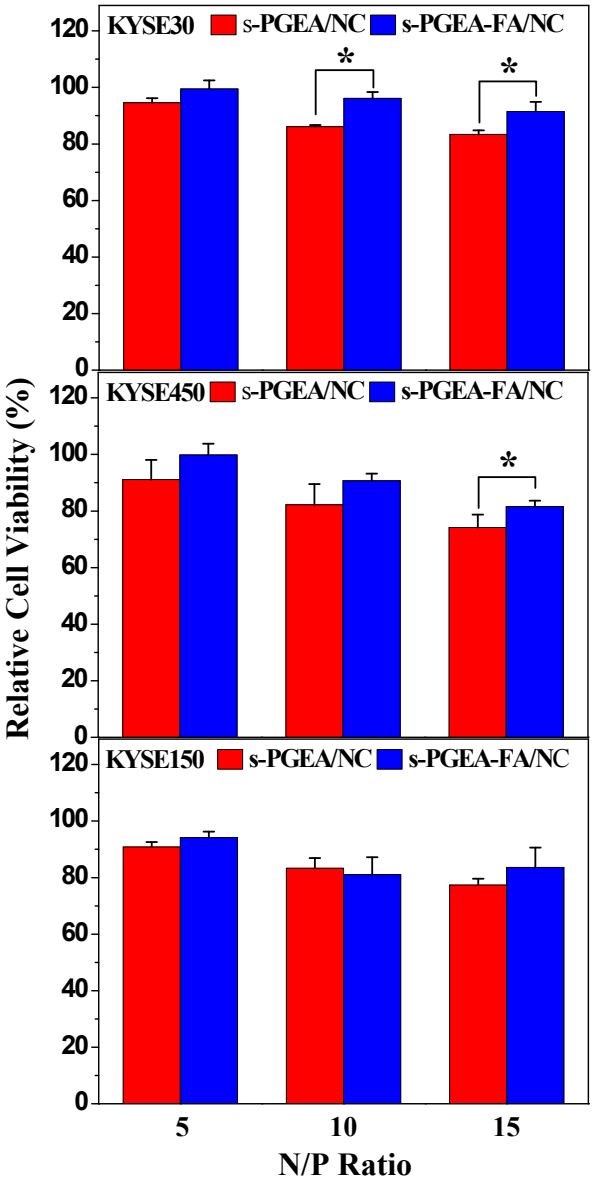


Figure S2. Relative cell viabilities mediated with s-PGEA/NC and s-PGEA-FA/NC complexes in KYSE30, KYSE450, and KYSE150 cell lines, where error bars represent the standard deviation of six measurements (*$P < 0.05$).