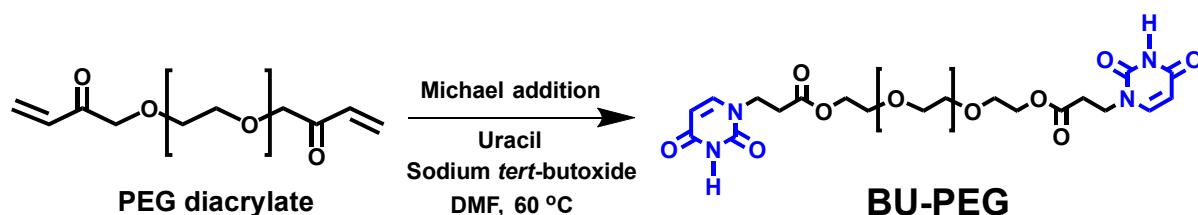
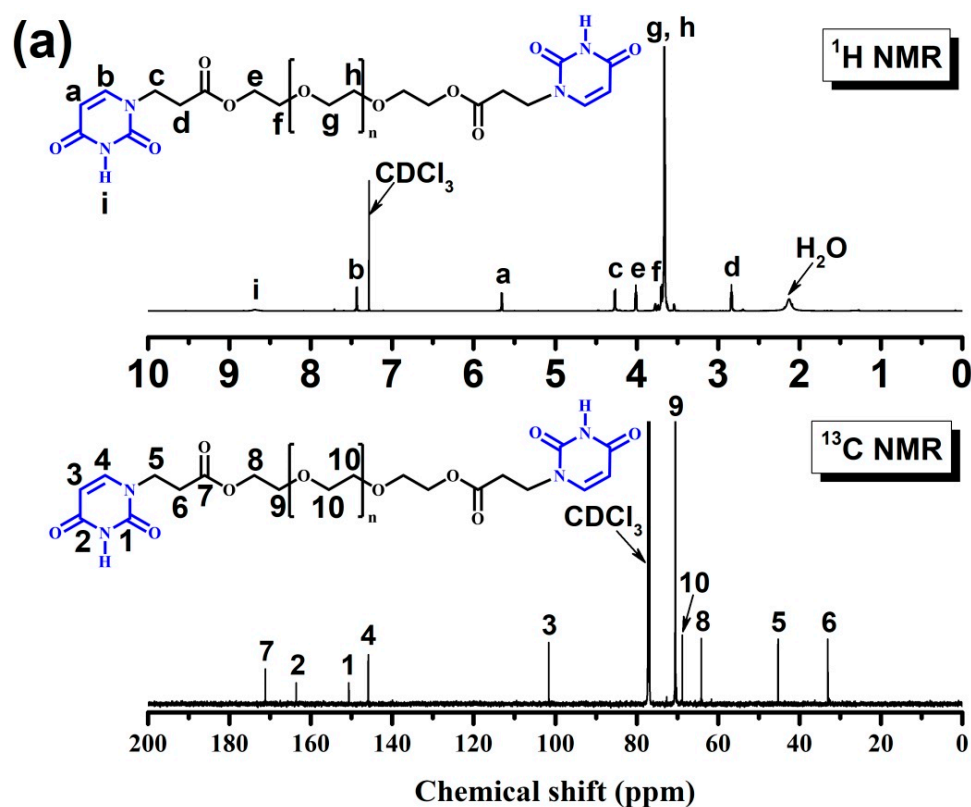


Supplementary Materials: Complementary Nucleobase Interactions Drive Co-Assembly of Drugs and Nanocarriers for Selective Cancer Chemotherapy

Fasih Bintang Ilhami, Enyew Alemayehu Bayle and Chih-Chia Cheng



Scheme S1. Process for the synthesis of BU-PEG.



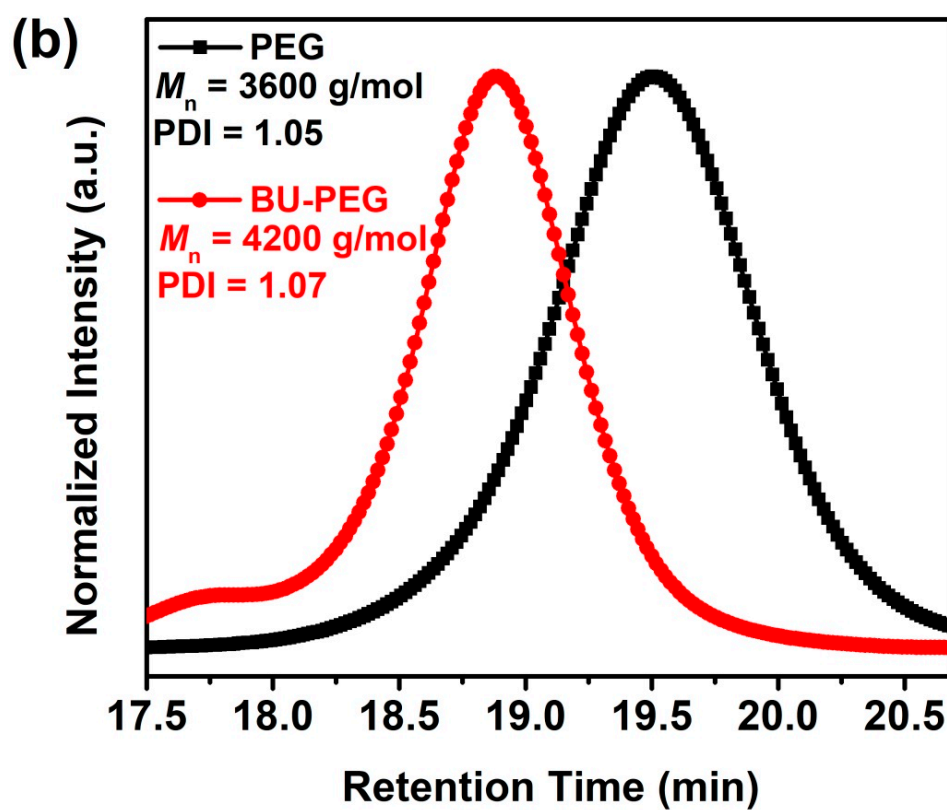


Figure S1. (a) ^1H and ^{13}C NMR spectra of BU-PEG in CDCl_3 obtained at 25 °C. (b) GPC curves for PEG and BU-PEG in THF at 40 °C.

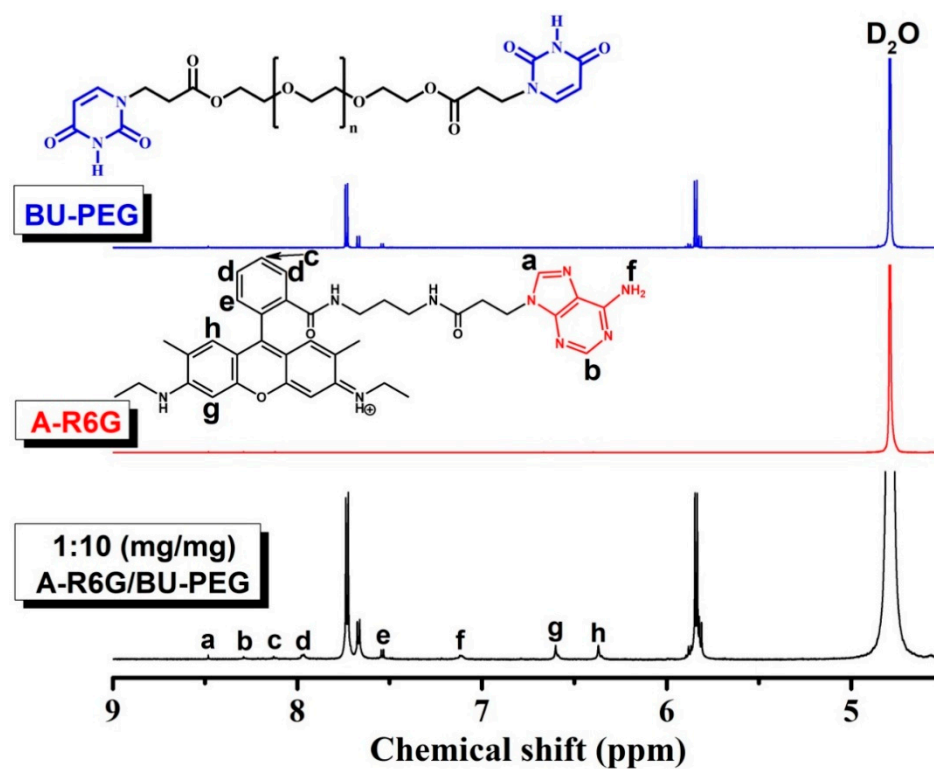


Figure S2. ^1H NMR spectra of BU-PEG, A-R6G, and A-R6G/BU-PEG complexes in D_2O obtained at 25 °C.

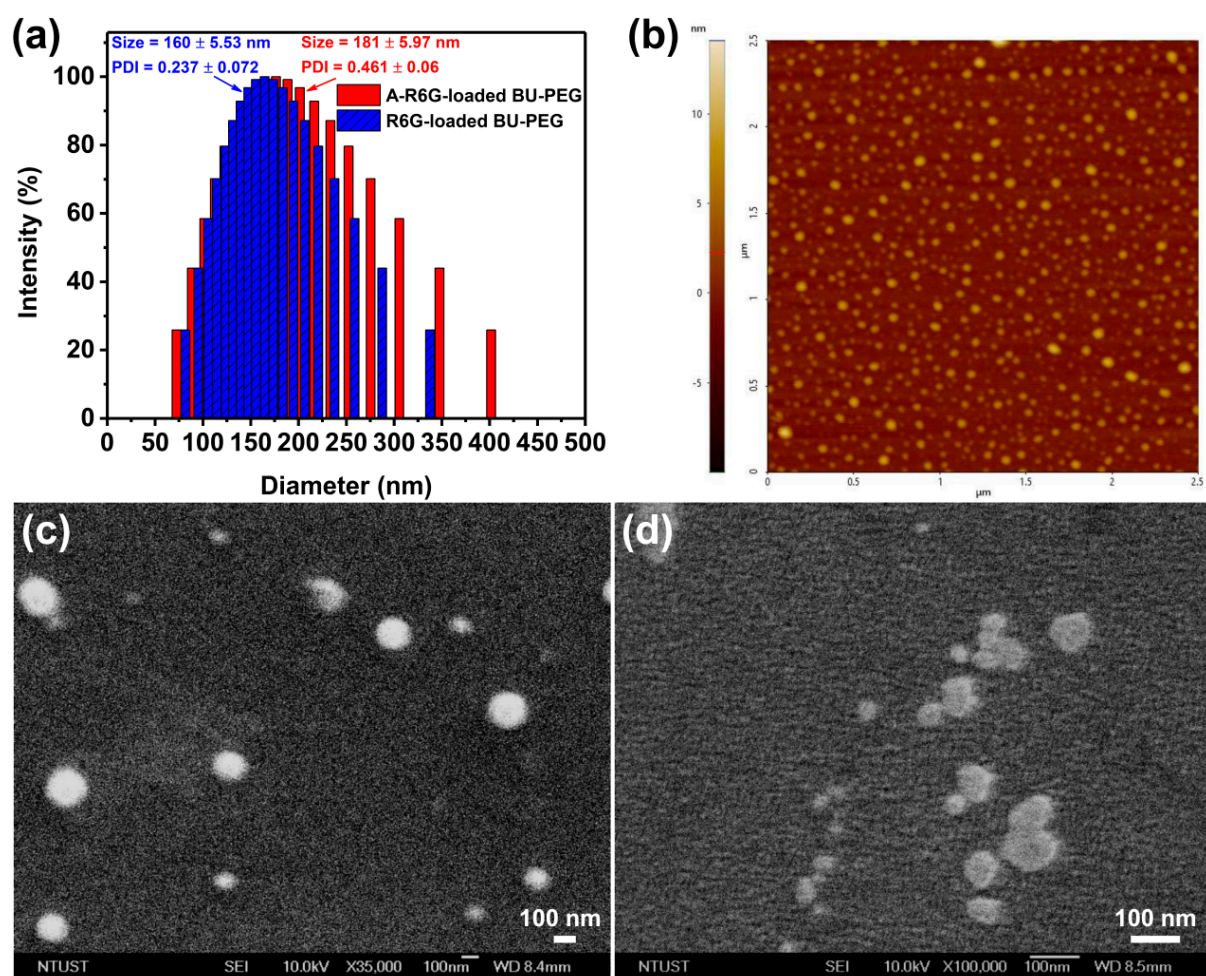


Figure S3. (a) DLS profiles for A-R6G-loaded and R6G-loaded BU-PEG nanogels in water at 25 °C. (b) AFM image of R6G-loaded BU-PEG. SEM images of (c) A-R6G-loaded BU-PEG and (d) R6G-loaded BU-PEG nanogels.

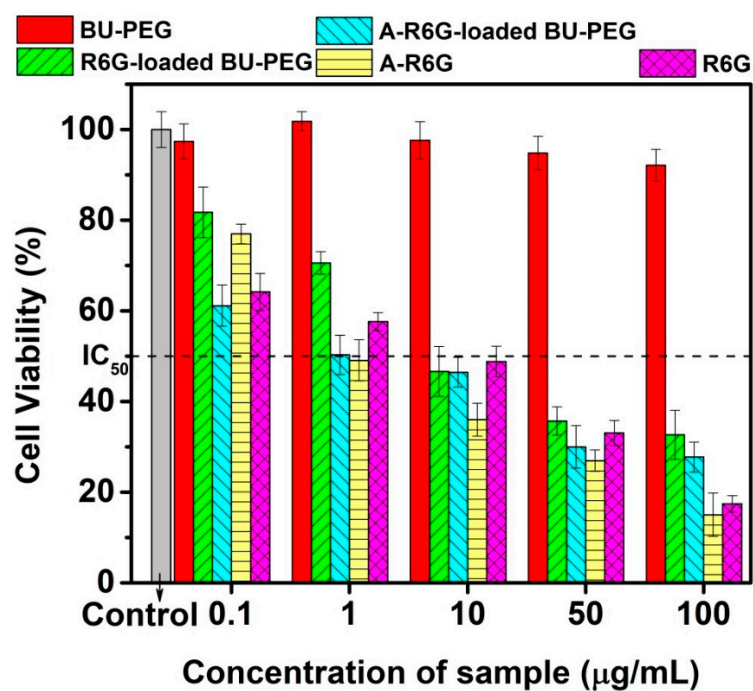


Figure S4. *In vitro* MTT assay cytotoxicity of BU-PEG, A-R6G, R6G, and A-R6G-loaded and R6G-loaded BU-PEG nanogels towards MG-63 cells.

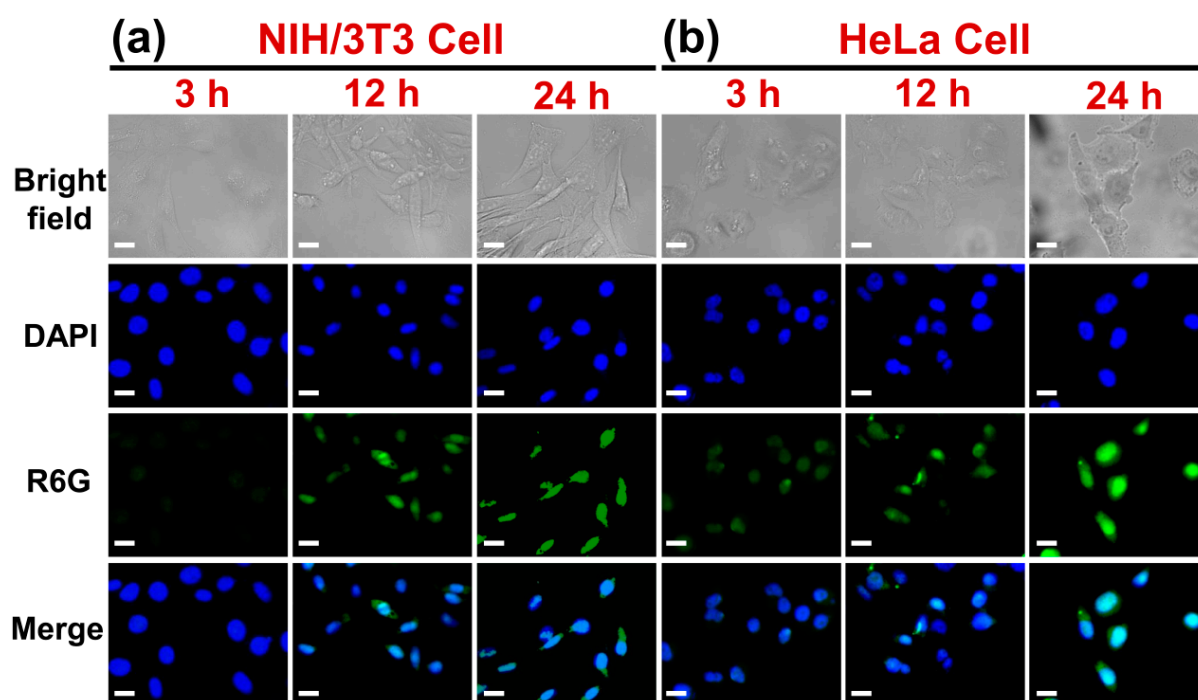


Figure S5. CLSM images of (a) NIH/3T3 cells and (b) HeLa cells cultured with R6G-loaded BU-PEG nanogels at normal physiological conditions (pH 7.4 and 37 °C) for 3 h, 12 h, or 24 h. The scale bars in all CLSM images are 20 μm.

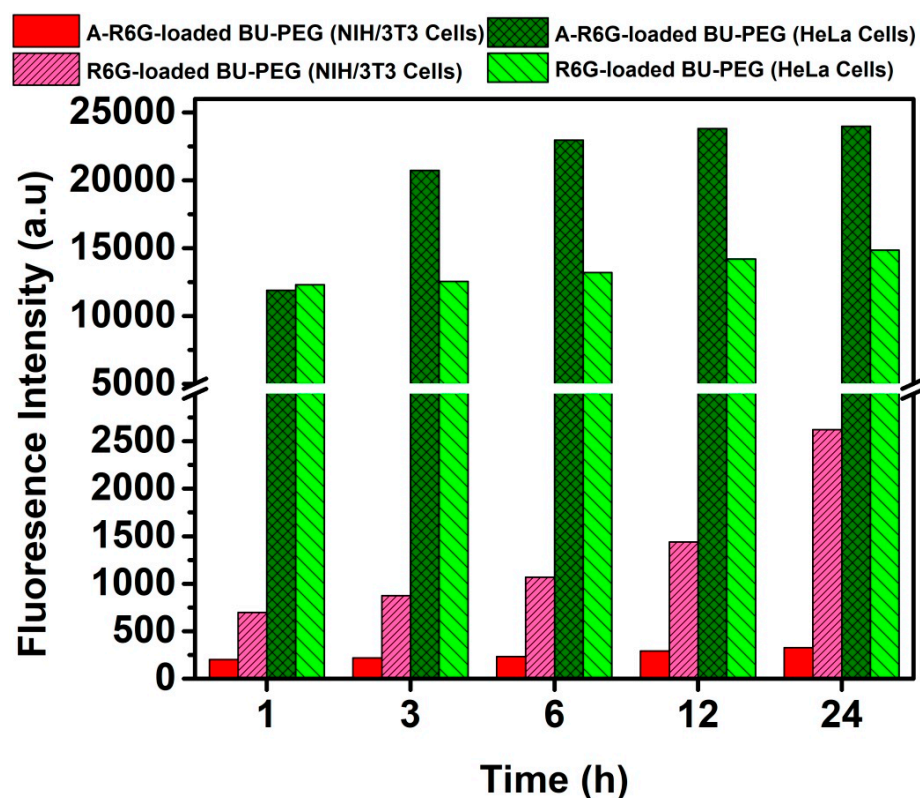


Figure S6. Fluorescence intensity of NIH/3T3 and HeLa cells after incubation with A-R6G-loaded and R6G-loaded BU-PEG nanogels for different periods of time (1, 3, 6, 12, or 24 h).

Table S1. Hydrodynamic particle size, zeta potential, drug-loading content (DLC) and drug-loading efficiency (DLE) of A-R6G-loaded and R6G-loaded BU-PEG nanogels.

A-R6G-loaded sample	Drug:Carrier (weight ratio)	Particle Size	Zeta Potential (mV)	DLC \pm SD (%)	DLE \pm SD (%)
BU-PEG	-	85.9 \pm 4.67	4.31 \pm 4.47	-	-
A-R6G/BU-PEG	0.2:1	102 \pm 6.13	-38.29 \pm 6.44	37.19 \pm 1.76	55.23 \pm 4.15
	0.5:1	148 \pm 5.09	-40.37 \pm 5.95	55.50 \pm 1.81	46.83 \pm 1.30
	1:1	181 \pm 5.97	-51.21 \pm 3.66	69.04 \pm 2.89	33.76 \pm 1.48
R6G/BU-PEG	0.2:1	108 \pm 4.93	12.47 \pm 6.94	18.45 \pm 1.77	70.32 \pm 2.45
	0.5:1	123 \pm 7.58	13.32 \pm 6.04	20.14 \pm 2.07	59.83 \pm 1.46
	1:1	160 \pm 5.53	19.29 \pm 5.11	22.67 \pm 3.45	43.71 \pm 4.43