Supporting Information

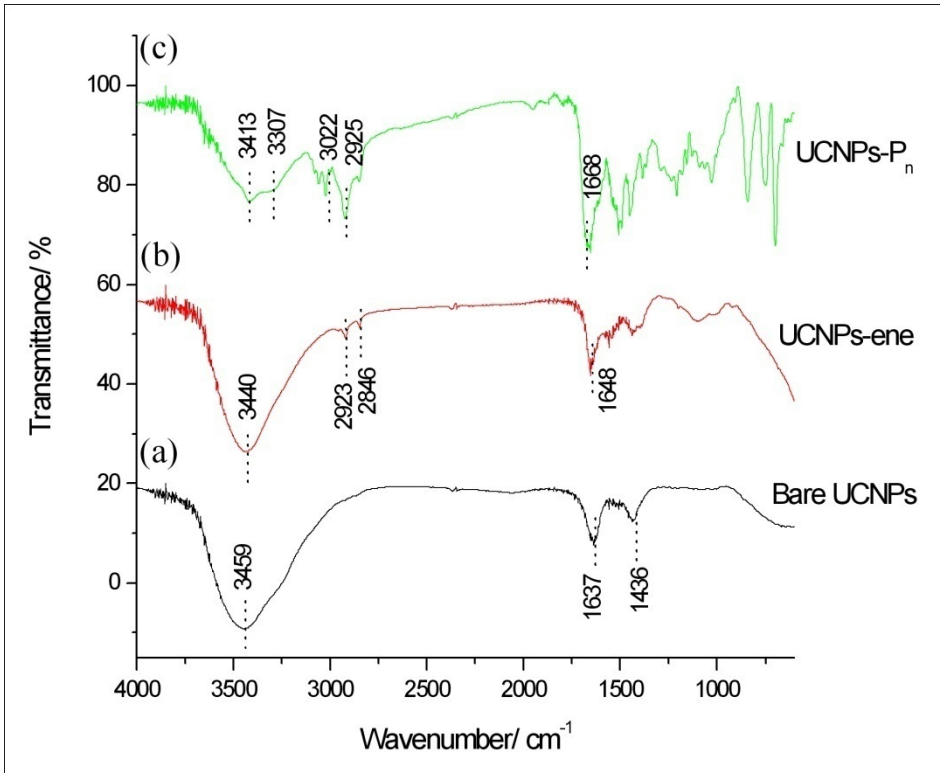

Figure S1. FTIR transmission spectra of (a) amine-functionalized **$NaGdF_4$** and **$BaGdF_5$** (UCNPs-PEI), (b) click reaction-modified **$NaGdF_4$** and **$BaGdF_5$** (UCNPs-ene) and (c) Plk1-specific peptides-coated **$NaGdF_4$** and **$BaGdF_5$** (UCNPs-P_n).

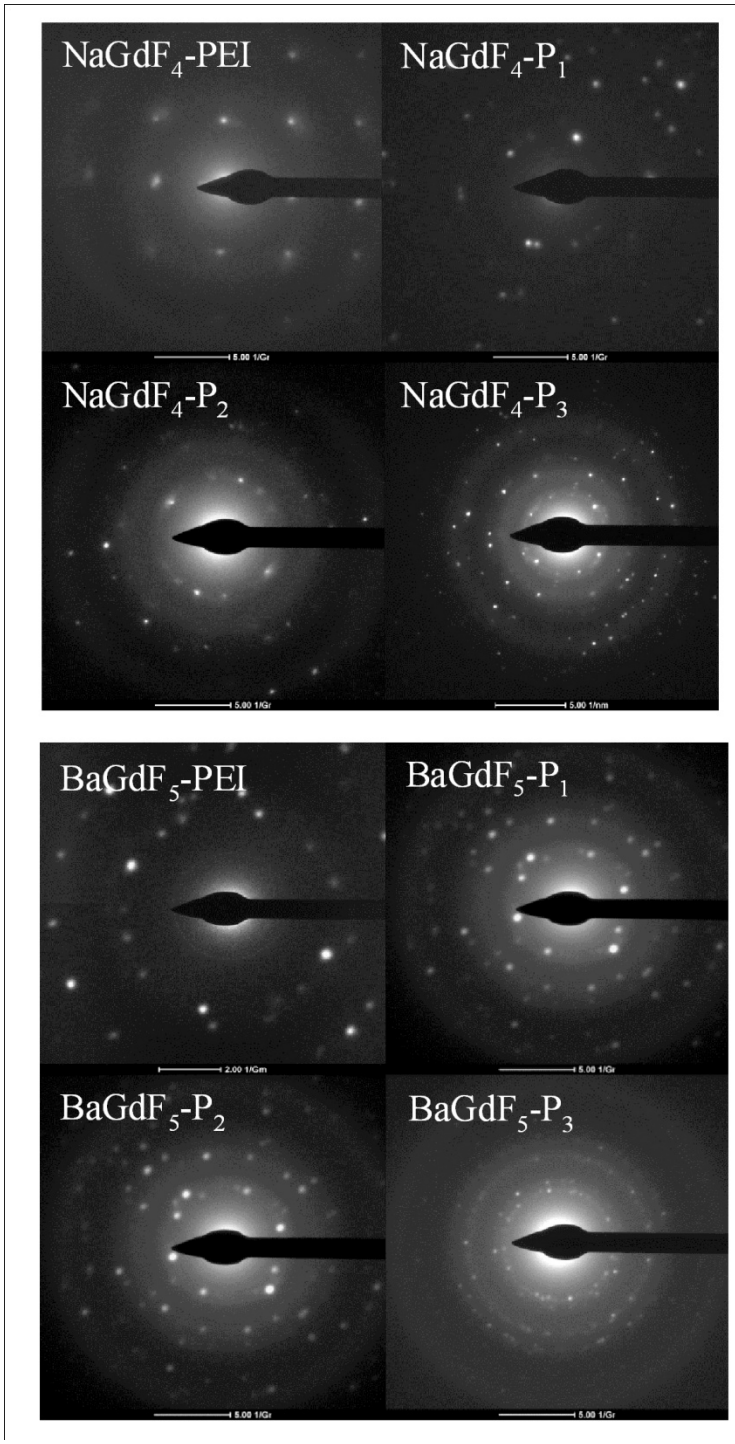

Figure S2. SAED patterns of **$NaGdF_4$-P_n** and **$BaGdF_5$-P_n.**

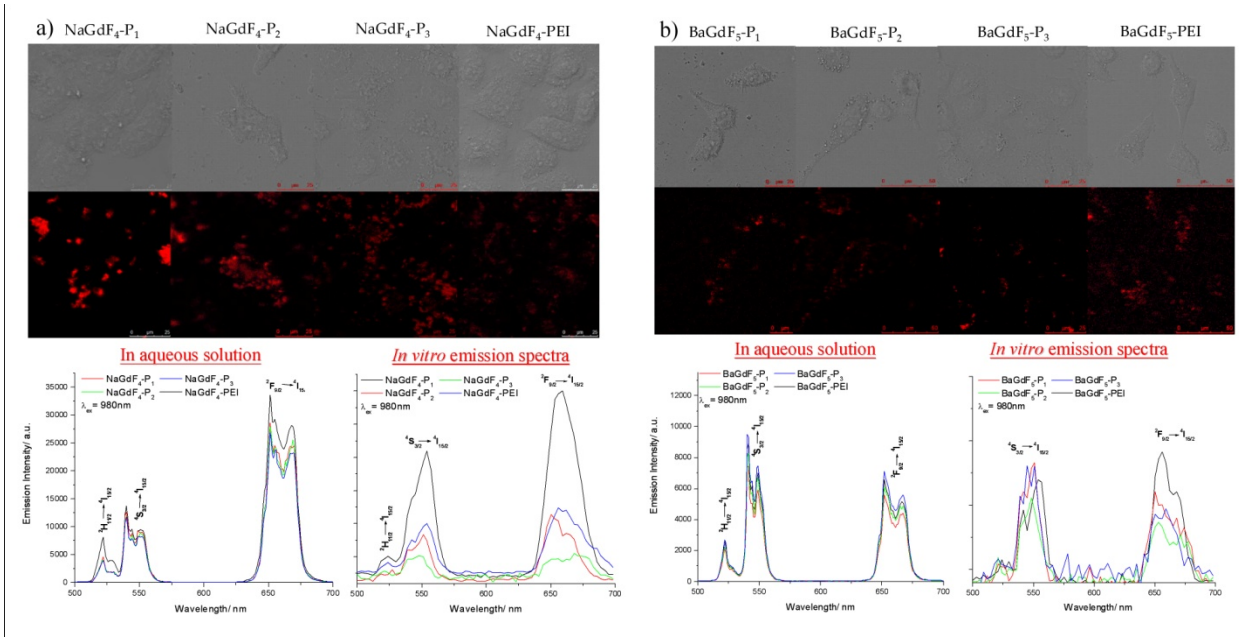

Figure S3. *In vitro* images and upconversion emission spectra in aqueous medium and *in vitro* of (a) **$NaGdF_4$-P_n** and (b) **$BaGdF_5$-P_n**.

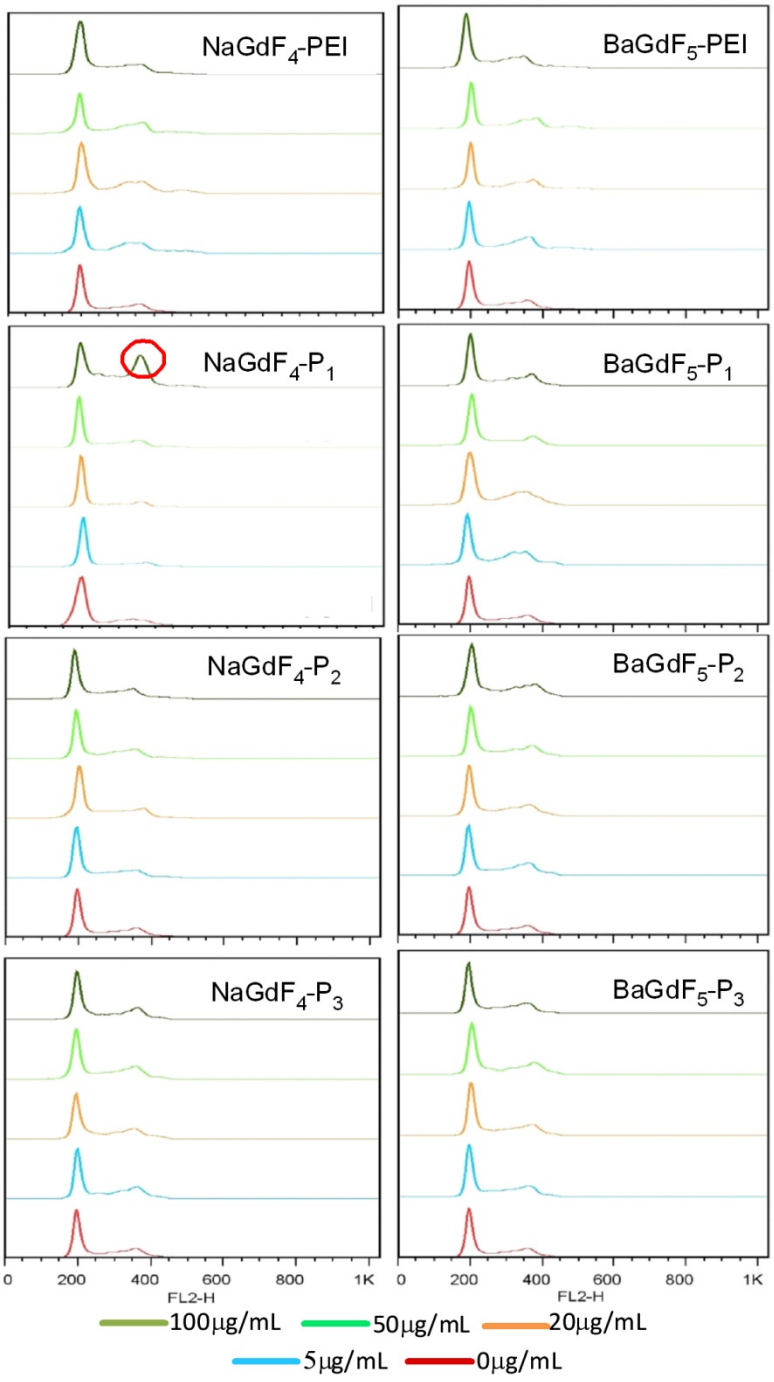

Figure S4. Flow cytometric analysis of cell cycle interruption of HeLa under the treatment of **$NaGdF_4$-P_n** or **$BaGdF_5$-P_n**.

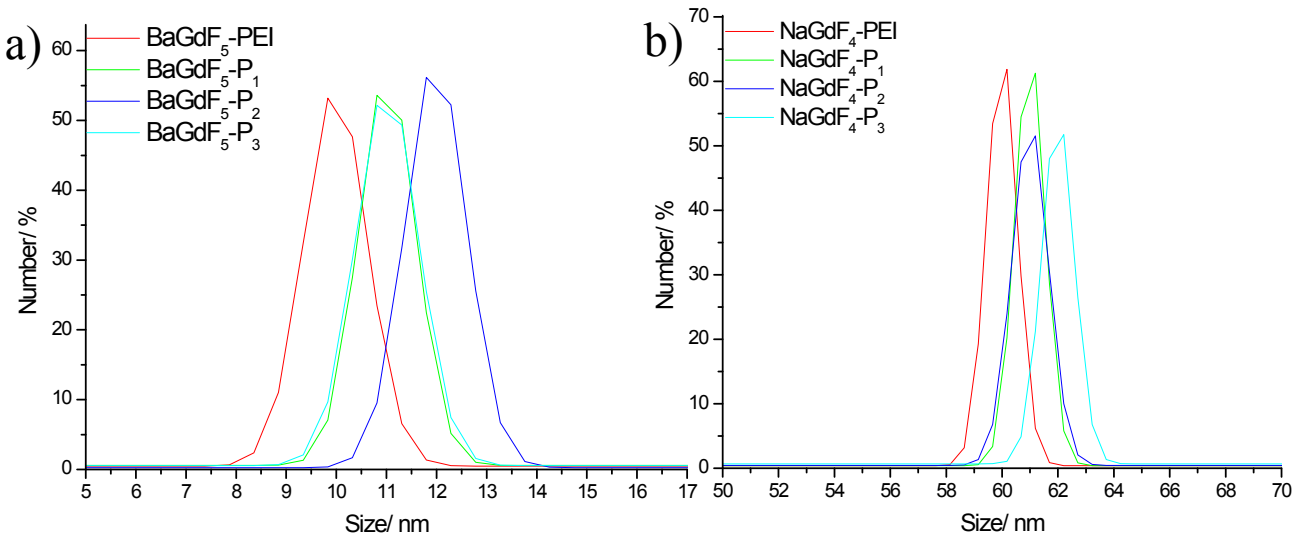

Figure S5. Dynamic light scattering analysis of a) **$BaGdF_5$-P_n** or b) **$NaGdF_4$-P_n** in PBS buffer, pH= 7.4.

	Cancer		Normal	
IC_{50}(μg/mL)	HeLa	HK-1	MRC-5	QSG-7701
$NaGdF_4$-PEI	398	516	435	432
$NaGdF_4$-P_1	103	223	334	401
$NaGdF_4$-P_2	111	183	383	609
$NaGdF_4$-P_3	95	172	400	732
$BaGdF_5$-PEI	470	474	616	435
$BaGdF_5$-P_1	264	229	549	322
$BaGdF_5$-P_2	327	141	850	334
$BaGdF_5$-P_3	221	427	669	498

Table S1. IC_{50} values of the as-synthesized **$NaGdF_4$-P_n** and **$BaGdF_5$-P_n** in both cancer and normal cell lines.