Molecular cascade reactor built by automated modular synthesis for cancer treatment

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Synthesis, purification, and characterization of oligonucleotides

Figure S1 $^1$H NMR spectrum of compound 1

Figure S2 $^1$H NMR spectrum of compound S1
Figure S3 $^1$H NMR spectrum of compound 2

Figure S4 $^{13}$C NMR spectrum of compound 2
Figure S5 $^{31}$P NMR spectrum of compound 2

Figure S6 Hydrodynamic sizes of PAS1411-PA and AS1411/hemin-PA.

Figure S7 Hydrodynamic sizes of AS1411/hemin-PA in the various environments.
Figure S8 ESI-MS analysis of AS1411-0T-PA, AS1411-4T-PA, AS1411-10T-PA, and AS1411-20T-PA by Sangon (Shanghai). Calculated molecular weights were 8941.64, 10158.42, 11983.6, and 15025.56, and observed DNA peak was 8942.0, 10158.4, 11983.4, 15025.6 (M+H), respectively.
Figure S9  Cell viability of MCF-7 cells incubated with various concentrations of free PA, AS1411-PA or AS1411/hemin-PA in the dark for 24 h.

Figure S10  Body weight changes of various groups after treatment for 16 days.
Figure S11 Photographs of mice after various treatments indicated at day 0 and day 16.

Figure S12 Microphotographs of H&E-stained major organs extracted from healthy mice or AS1411/hemin-PA plus light-treated mice.