Electronic Supplementary Material (ESI) for RSC Advances.

DNA–Affibody Nanoparticles Delivery System for Cisplatin-Based Breast Cancer Chemotherapy

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Table S1. Detailed information of the ssDNA sequence

Name	Sequence
DNA1	5'- NH_2- AGGCAGTTGAGACGAACATTCCTAAGTCTGAAATTTATCACCCGCCATAGT AGACGTATCACC -3'
DNA2	5'- NH_2- CCTCGCATGACTCAACTGCCTGGTGATACGAGGATGGGCATGCTCTTCCCG ACGGTATTGGAC -3'
DNA3	5'- CTTGCTACACGATTCAGACTTAGGAATGTTCGACATGCGAGGGTCCAATACCGA CGATTACAG /FAM/-3'
DNA4	5'- GGTGATAAAACGTGTAGCAAGCTGTAATCGACGGGAAGAGCATGCCCATCCACT ACTATGGCG /FAM/-3'

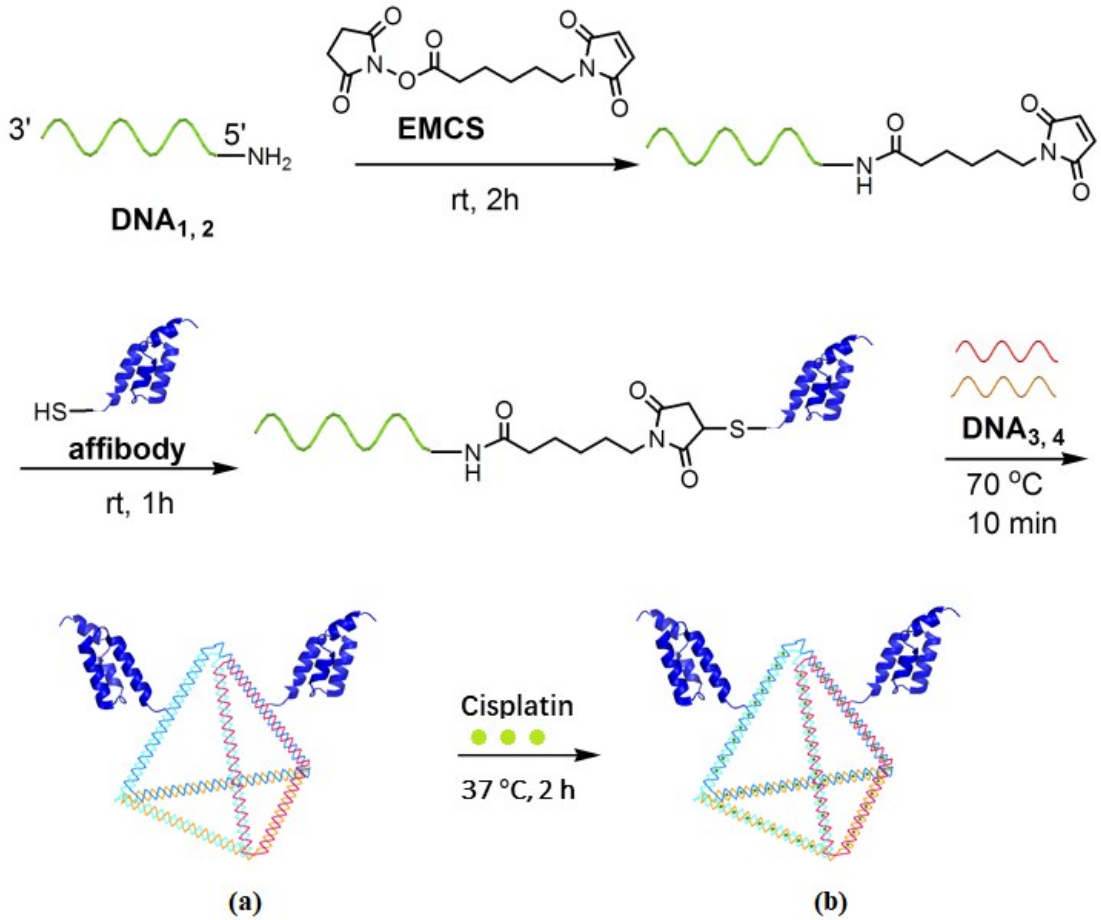

Figure S1. Synthetic route of DNA tetrahedron–affibody nanoparticle (a) and cisplatin–DNA tetrahedron–affibody nanoparticle (b).

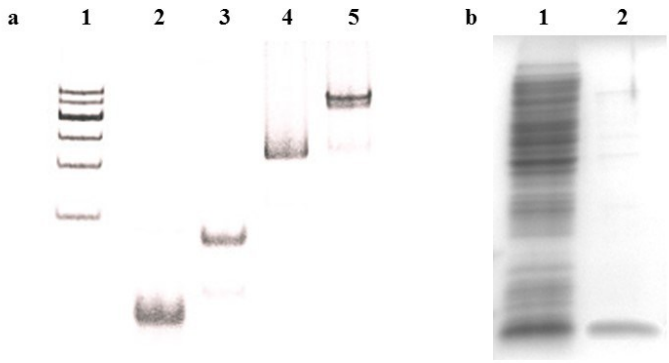

Figure S2. Purification of DNA tetrahedron and affibody using native polyacrylamide gel electrophoresis (PAGE). (a) Purification of DNA tetrahedron. The results were analyzed on a 10% native polyacrylamide gel electrophoresis followed by Gel-Red staining. Lane 1, marker; lane 2, DNA1; lane 3, DNA1-Affibody; lane 4, DNA tetrahedron; lane 5, DNA tetrahedron-affibody. (b) Purification of DNA tetrahedron and affibody. The results were analyzed on a 10% denaturing polyacrylamide gel followed by Gel-Red staining. lane 1, crude lysate of *E. coli* expression; lane 2, purified affibody.

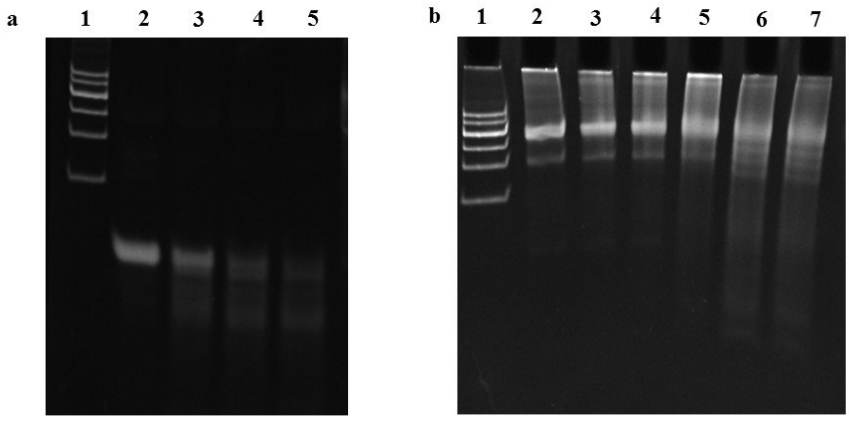

Figure S3. Electrophoretic analysis of the stability of the DNA tetrahedron nanostructure in FBS. Single-chain DNA and the DNA tetrahedron were incubated in FBS at 37 °C for 2-24 h and then analyzed with gel electrophoresis. (a) The stability of single-chain DNA in FBS. Lane 1, marker; lane 2, 0 h; lane 3, 2 h; lane 4, 4 h; lane 5, 8h. (b) The stability of DNA tetrahedron nanostructure in FBS. Lane 1, marker; lane 2, 0 h; lane 3, 2 h; lane 4, 4 h; lane 5, 8 h; lane 6, 12 h; lane 7, 24 h.

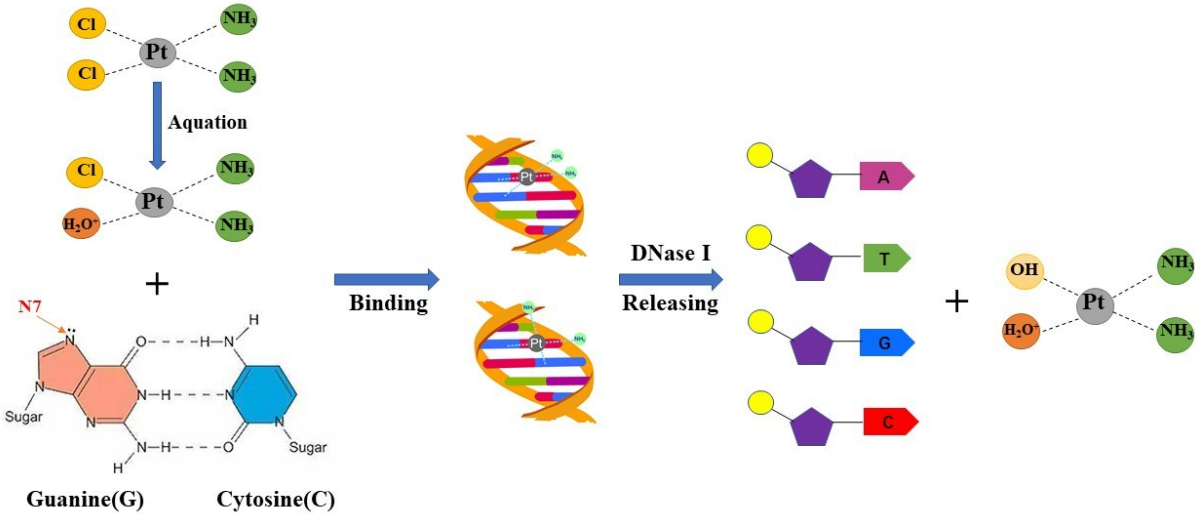

Figure S4. Schematic diagram for binding of cisplatin with DNA and releasing of cisplatin from DNA.

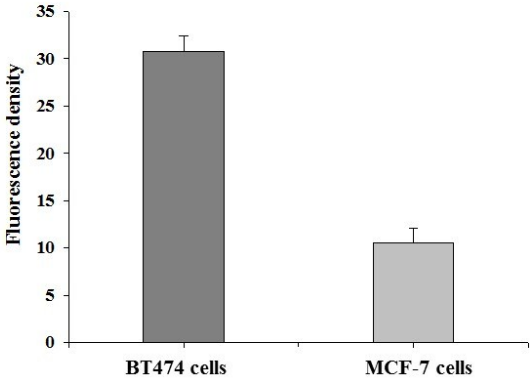

Figure S5. Semi-quantification of the fluorescence density of cisplatin–DNA tetrahedron–affibody nanoparticle on the surface of BT474 and MCF-7 cells. The fluorescent images were obtained using a confocal laser scanning microscopy. The mean intensity within the region of interest was calculated. The data were expressed as mean ± SD.