

Preparation of Ru(II)@Oligonucleotides Nanosized Polymers as Potential Tumor-Imaging Luminescence Probes

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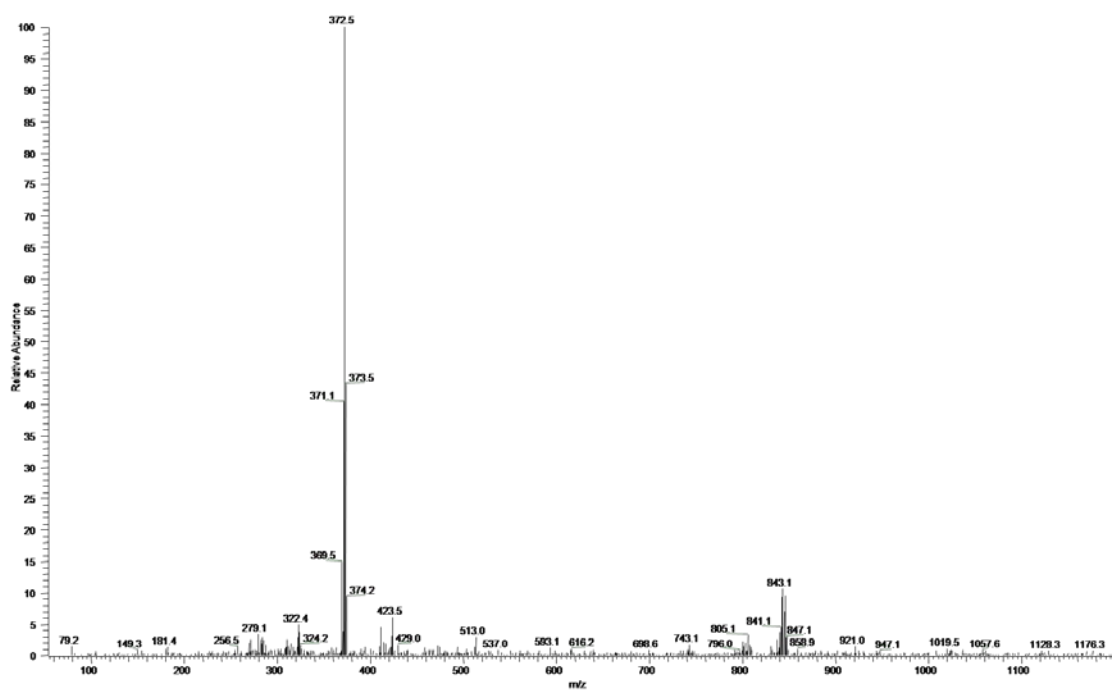
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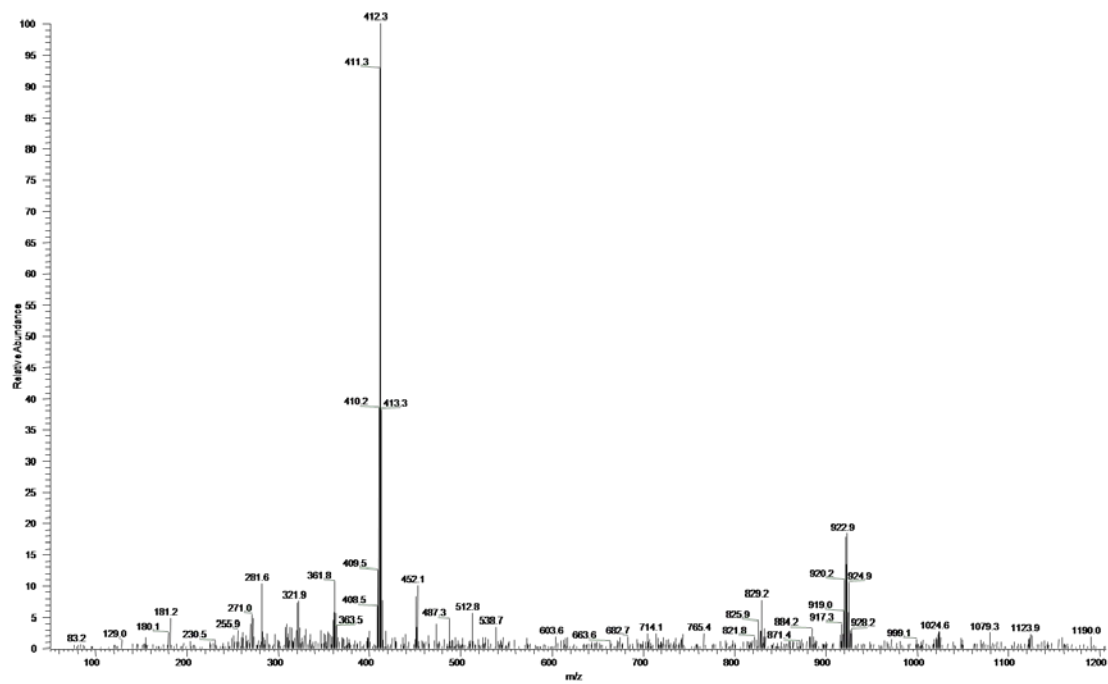
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1. The ESI-MS spectra of 1 and 2



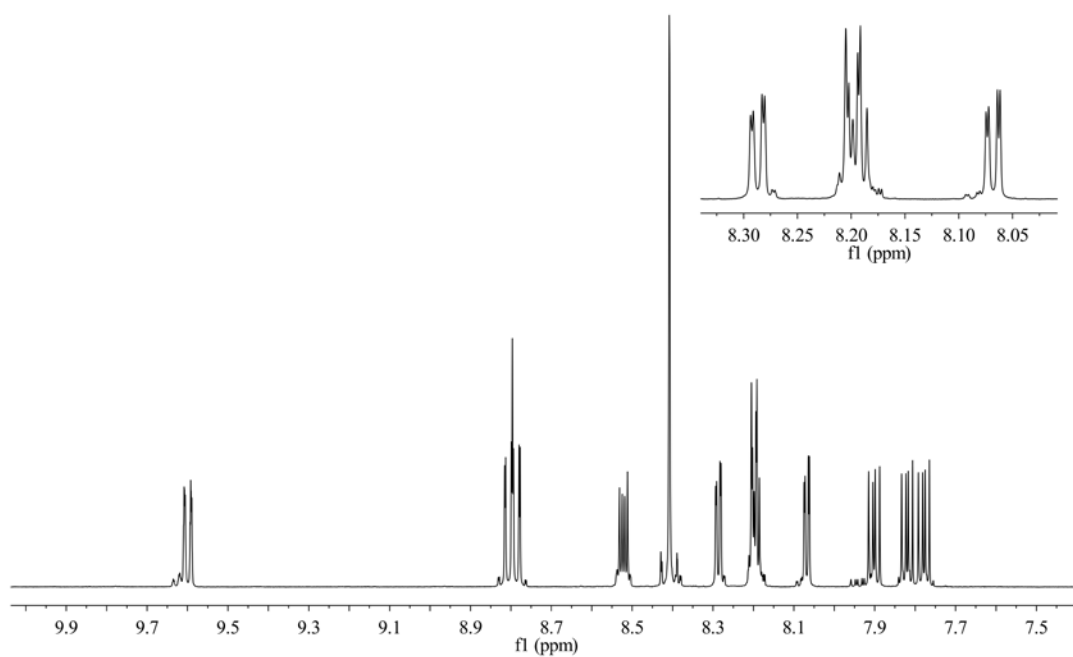
A



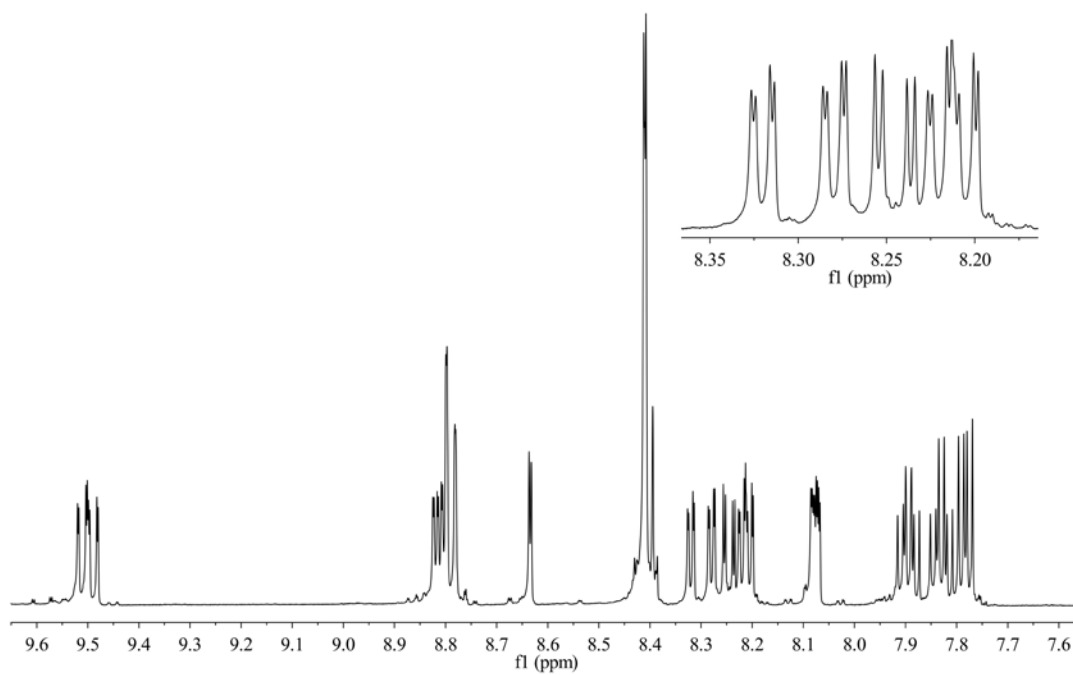
B

Figure S1. The ESI-MS spectra of 1 (A) and 2 (B)

2. The ^1H NMR spectra of **1** and **2**



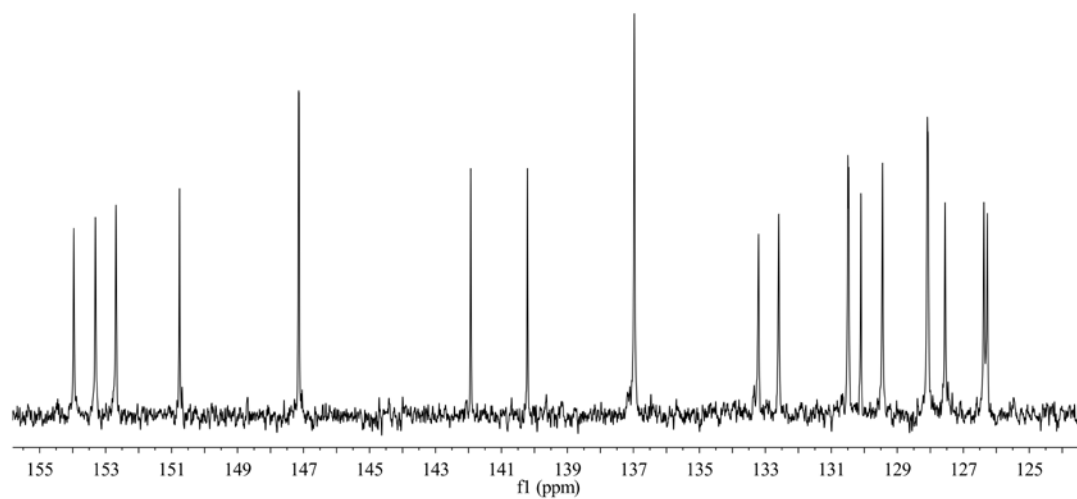
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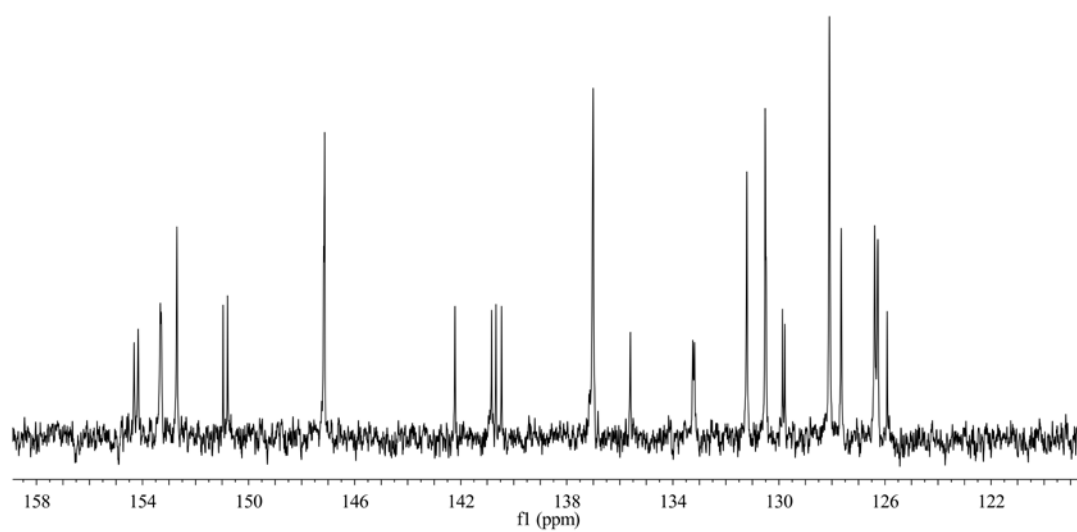
B

Figure S2. The ^1H NMR spectra of **1** (A) and **2** (B)

3. The ^{13}C NMR spectra of **1** and **2**



A



B

Figure S3. The ^{13}C NMR spectra of **1** (A) and **2** (B)

4. The average sizes of oligonucleotides induced by **1** and **2**

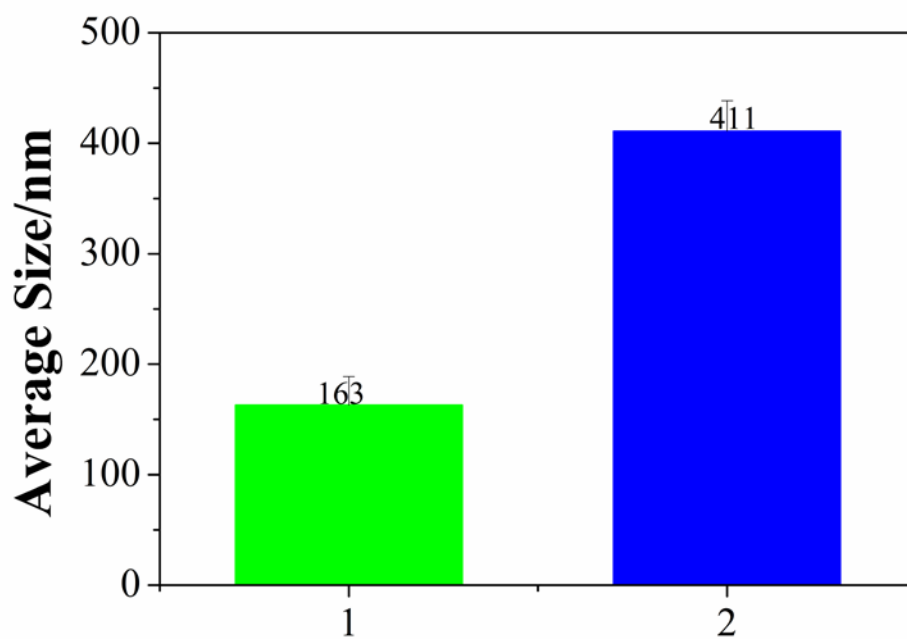


Figure S4. The average sizes of nanosized polymers of oligonucleotides induced by **1** and **2**. Error bars represent the mean standard deviation.

5. The average sizes of CT-DNA induced by **1** and **2**

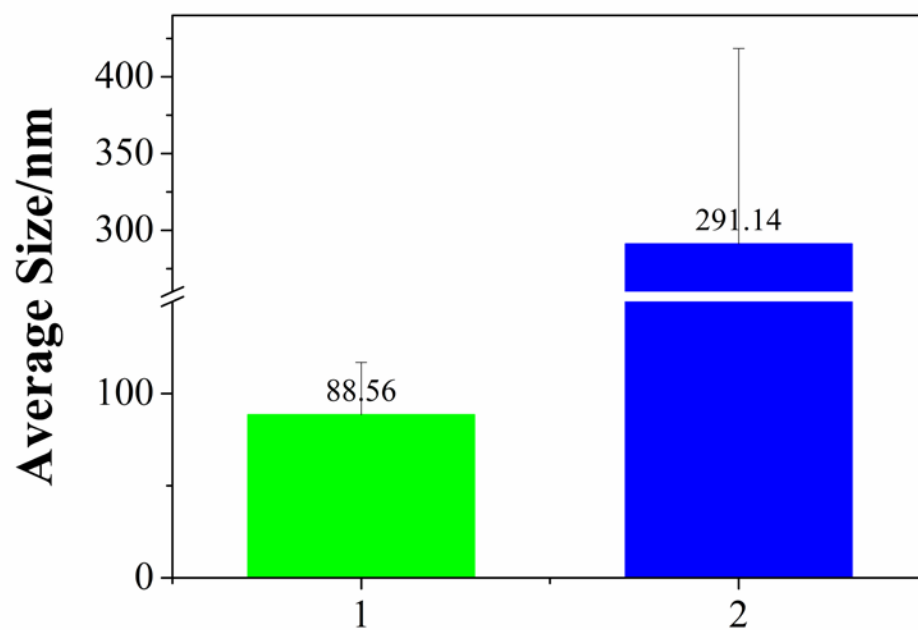


Figure S5. The average sizes of nanosized polymers of CT-DNA induced by **1** and **2**. Error bars represent the mean standard deviation.

6. The AFM images of oligonucleotides and CT-DNA

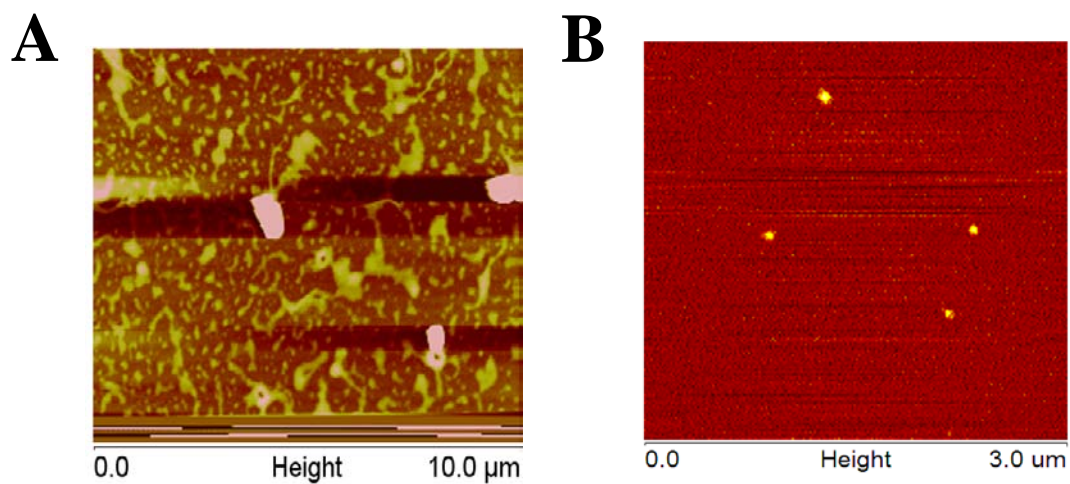


Figure S6. (A) The AFM image of free oligonucleotides (100 μM) in pH = 7.2 Tris-HCl KCl buffers. (B) The AFM image of free CT-DNA (100 μM) in pH = 7.2 Tris-HCl NaCl buffers .

7. TEM observation

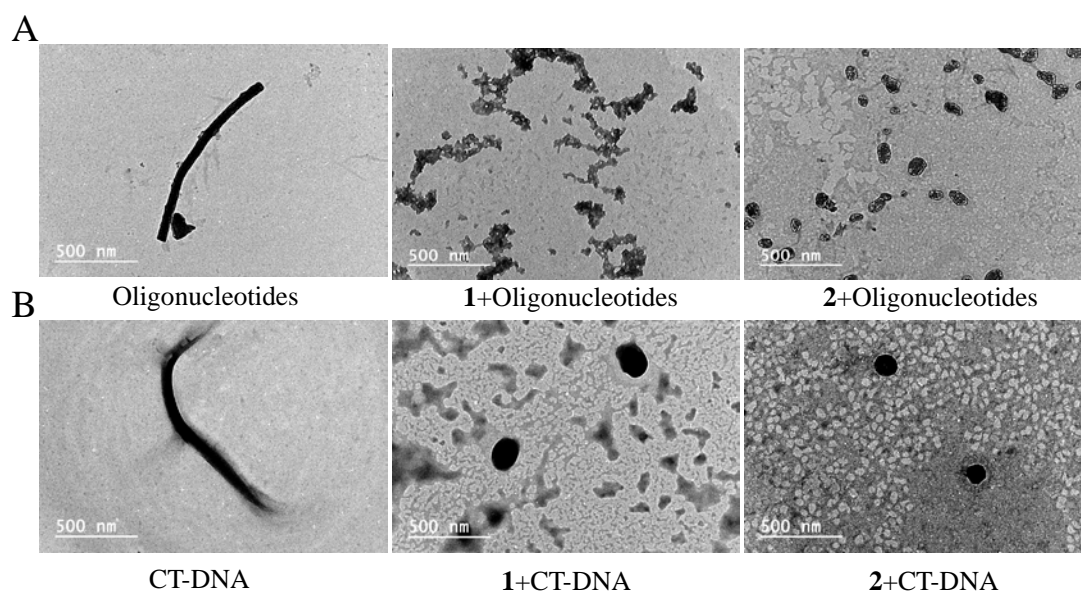


Figure S7. (A) TEM image of free oligonucleotides, **1@oligonucleotides** and **2@oligonucleotides** (in Tris-HCl KCl buffer, pH 7.2). ($[Ru] = 100 \mu\text{M}$, $[\text{oligonucleotides}] = 100 \mu\text{M}$); (B) TEM image of free CT-DNA, **1@CT-DNA** and **2@CT-DNA** (in Tris-HCl NaCl buffer, pH 7.2). ($[Ru] = 100 \mu\text{M}$, $[\text{CT-DNA}] = 100 \mu\text{M}$)

8. Particle size

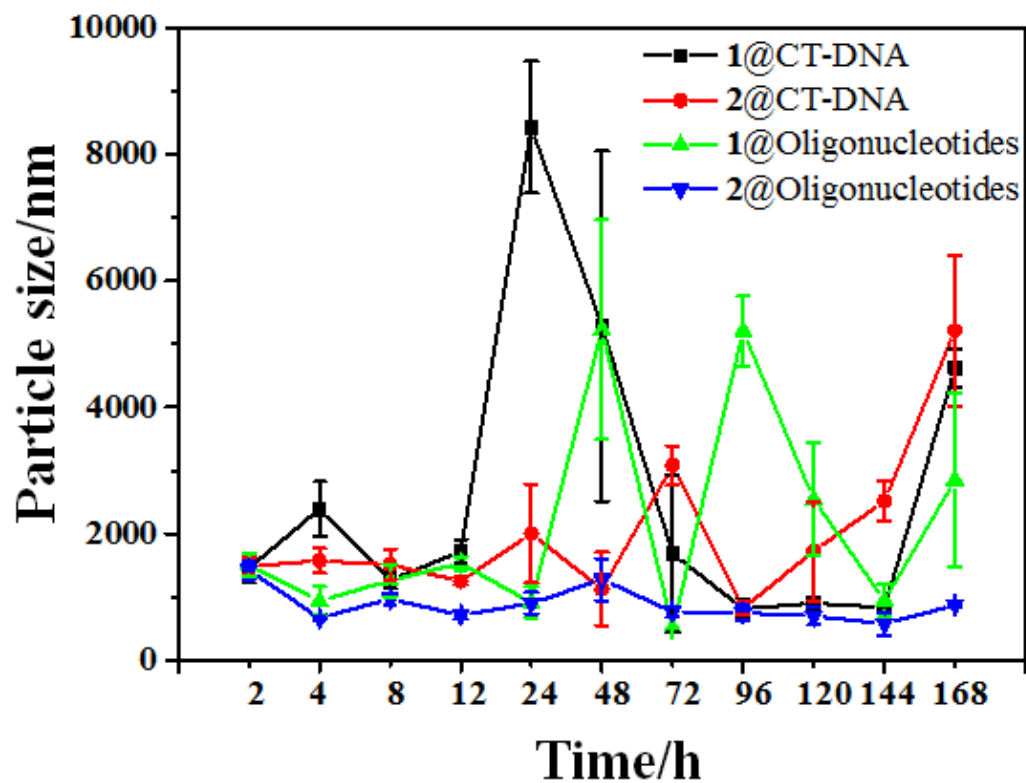


Figure S8. The particle size change of oligonucleotides and CT-DNA after being treating by **1** and **2** varied with time. ($[\text{Ru}] = 10 \mu\text{M}$, $[\text{CT-DNA}] = 10 \mu\text{M}$, $[\text{oligonucleotides}] = 10 \mu\text{M}$)

9. Viscosity Measurements

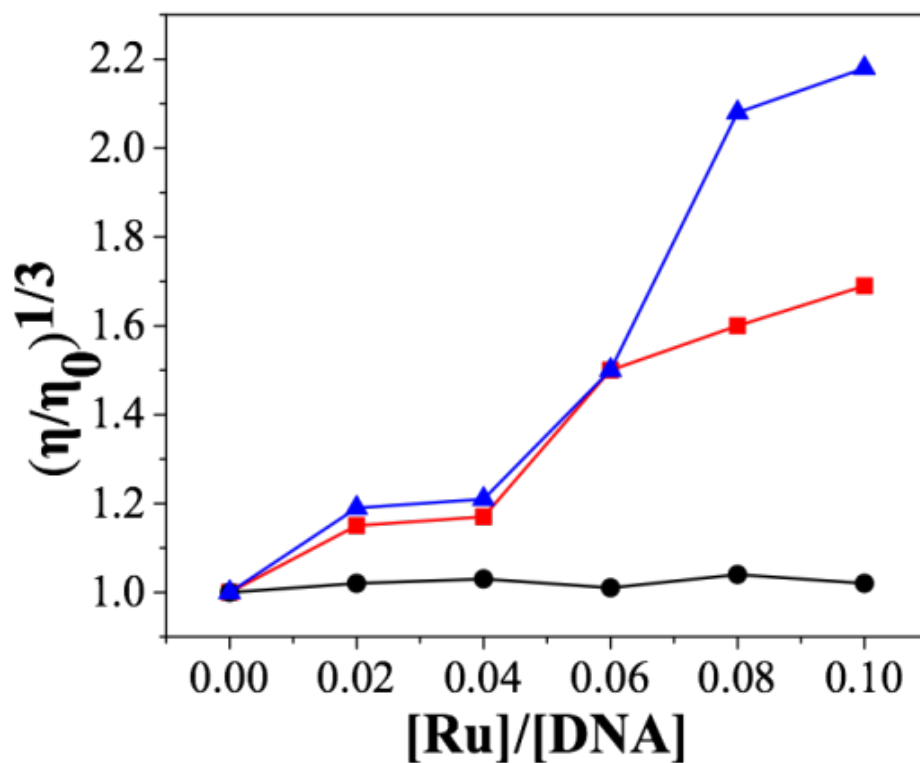


Figure S9. Effect of increasing amounts of 1 (\blacksquare), 2 (\blacktriangle), $Ru(bpy)_3Cl_2$ (\bullet) on the relative viscosity of CT-DNA at $30.0 (\pm 0.1)^\circ C$, the total concentration of DNA is 0.5 mM.

10. Zebrafish imaging

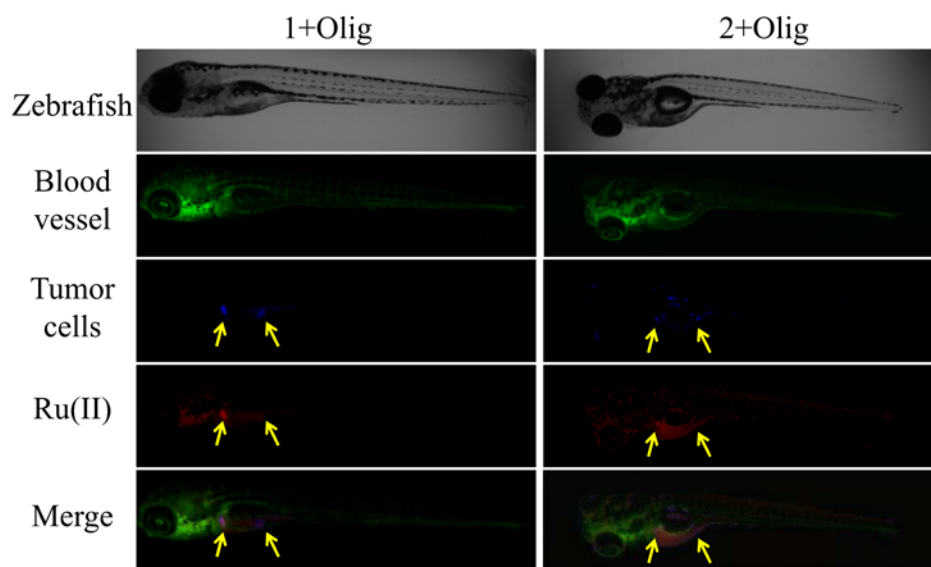


Figure S10. Tumor area highlighted by **1**@oligonucleotides and **2**@oligonucleotides in zebrafish xenografts model. ($[\text{Ru}] = 2.5 \mu\text{M}$, $[\text{oligonucleotides}] = 2.5 \mu\text{M}$)