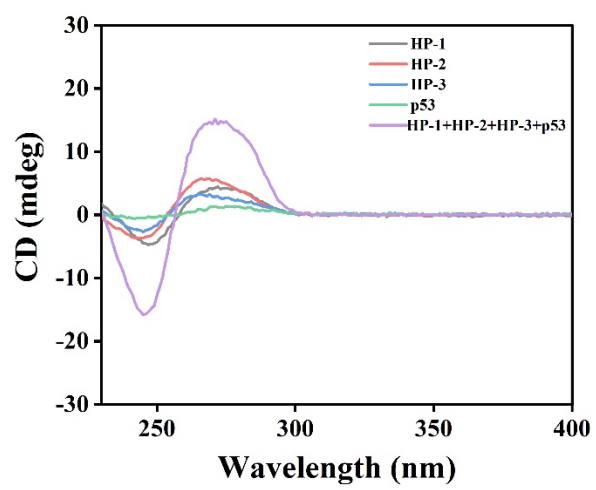
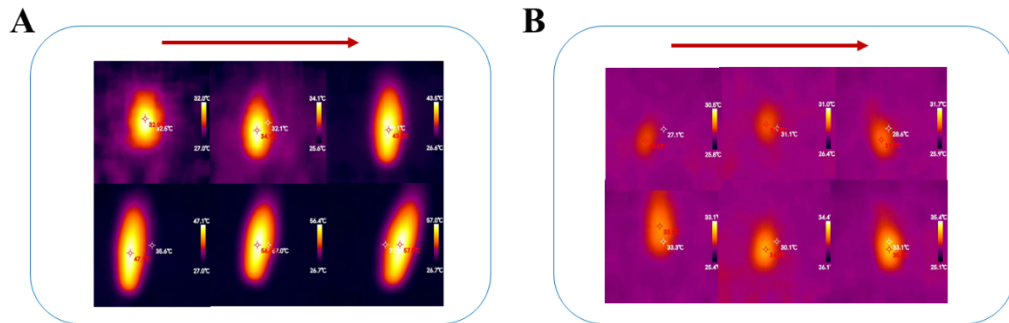


**Colorimetric and photothermal dual-modal analysis of  
cancer-related gene based on G-quadruplex-hemin cascade  
signal amplification**



**Fig S1.** Circular dichroism of different DNA strands.



**Fig S2.** (A) Thermograms of different mutant p53 gene concentrations in the presence of I;  
 Thermograms of different mutant p53 gene concentrations in the absence of I.

**Table S1.** DNA sequences used in this experiment

| <b>Primer name</b> | <b>DNA sequence (from 5'-3')</b>   | <b>Number of bases</b> |
|--------------------|--|------------------------|
| HP-1               | AAA AAA ACA AATTAA ACA CCT TGA GTC<br>TTC CAG TGT GAT GAA GAA GAA GGT GTT<br>TAA GTA | 60                     |
| HP-2               | AGG GCG GGT GGG TGT TTA AGT TGG AGA<br>ATT GTA CTT AAA CAC CTT CTT CTT GGG T         | 55                     |
| HP-3               | TGG GTC AAT TCT CCA ACT TAA ACT AGA<br>AGA AGG TGT TTA AGT TGG GTA GGG CGG<br>G      | 55                     |
| mutant p53         | TCA TCA CAC TGG AAG ACT C  | 19                     |
| A                  | TCG TCA CAC TGG AAG ACT C  | 19                     |
| B                  | TCA TCA CAC CGG AAG ACT C  | 19                     |
| C                  | TCA TCA CAC TGG AAG GCT C  | 19                     |
| D                  | TCG TCA CAC CGG AAG ACT C  | 19                     |
| E                  | TCA TCA CAC CGG AAG GCT C  | 19                     |
| F                  | TCG TCA CAC CGG AAG GCT C  | 19                     |

**Table S2** Recovery assay of mutant p53 gene in human serum samples

| <b>Sample</b> | <b>Add (U L<sup>-1</sup>)</b> | <b>Found (U L<sup>-1</sup>)</b> | <b>RSD (%)</b> | <b>Recovery (%)</b> |
|---------------|-------------------------------|---------------------------------|----------------|---------------------|
| 1             | 0.000                         | No Found                        |                |                     |
|               |                               | 0.100                           |                | 100.8               |
| 2             | 0.100                         | 0.096                           | 0.048          | 95.99               |
|               |                               | 0.100                           |                | 100.7               |
|               |                               | 9.991                           |                | 99.91               |
| 3             | 10.00                         | 10.02                           | 0.219          | 100.2               |
|               |                               | 9.977                           |                | 99.77               |
|               |                               | 100.57                          |                | 100.6               |
| 4             | 100.0                         | 100.38                          | 1.910          | 100.4               |
|               |                               | 100.76                          |                | 100.8               |