# Supplementary Information

## Nanoparticle-aptamer based cytosensing for the detection of human non-small cell lung cancer cells

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**Table S1** The oligonucleotide sequence designed in the current study.

| Name | Sequence (5’-3’) |
|---|---|
| AS1411 | GGTGGTGGTGGTTGTGGTGGTGGTGG |
| FAM-AS1411 | FAM/GGTGGTGGTGGTTGTGGTGGTGGTGG |

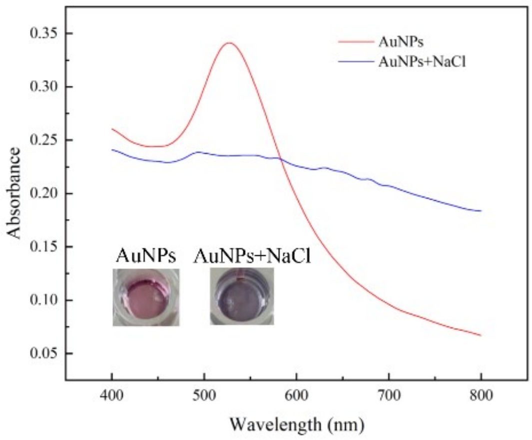


**Fig. S1** UV-vis spectrum and visualization images of AuNPs and aggregated AuNPs suspension.

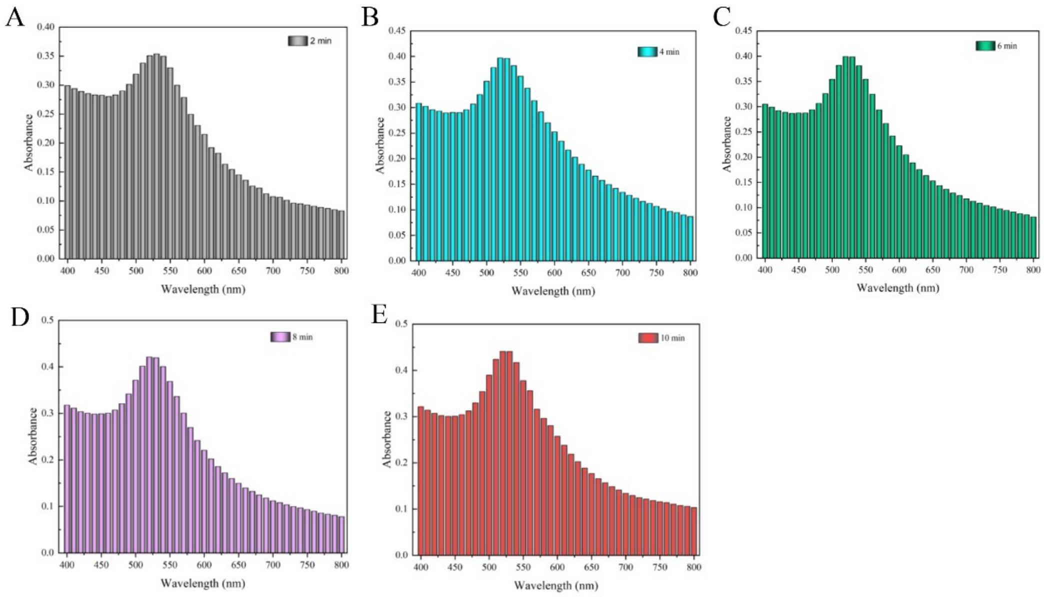


**Fig. S2** The optimization of boiling time for gold nanoparticles was investigated, with boiling durations set at (A) 2 min, (B) 4 min, (C) 6 min, (D) 8 min, and (E) 10 min. The corresponding maximum absorption peaks observed were 530 nm for (A) and 520 nm for (B), (C), (D), and (E).

**Table S2** Aptasensor platform targeting NSCLC compared to recent representative cellular sensors.

| Technique | Target cell | LOD(cells /mL) | Reference |
|---|---|---|---|
| Aptamer-modified gold nanofilms | MCF-7 | 500 | 1 |
| Gold nanocluster-based aptasensor | MUC1 | 221 | 2 |
| Nanochannel−ion channel hybrid | CCRF-CEM | 100 | 3 |
| A simple electrochemical method | Hela | 53 | 4 |
| Core−shell plasmonic gold nanorods | LM-MEL-33 | 50 | 5 |
| Metallic nanocages modified $Fe_3O_4$ nanoparticles | T47D | 42 | 6 |
| Cytosensing based on U-shaped fiber optic LSPR | MDA-MB-231 | 30 | 7 |
| Janus micromotors for motion-capture-ratiometric fluorescence | HepG2 | 25 | 8 |

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