Supplementary information

For

Rapid label-free visual detection of KRAS mutations using peptide nucleic acid and unmodified gold nanopartices

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Running title: Colorimetric detection of KRAS mutations

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Scheme S1. Schematic illustration of how different nucleic acids (PNA, PNA-DNA complexes and PNA-DNA mixture) affect AuNPs' intrinsic stability and AuNPs' stability against salt.

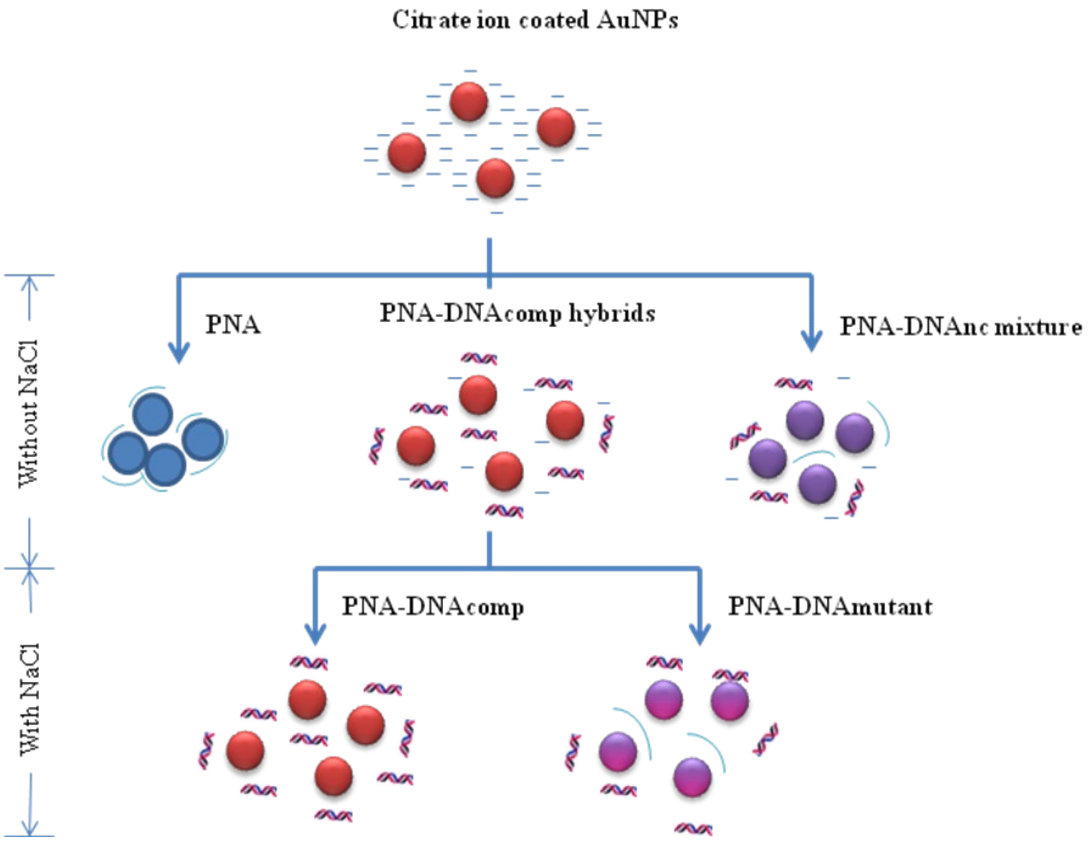

Figure S1. Colorimetric detection of PNA hybridization with specific sequence using PNA-induced AuNPs aggregation. Photographs and corresponding adsorption spectra of bare AuNPs solutions (A), and AuNPs solutions with 100 pmol PNA (B), AuNPs solutions containing with 100 pmol in the presence of 1 µM DNAcomp (C) and 1 µM DNAnc (D) in 100 µl volume. Photographs of A′-D′ are solutions A-G containing 0.1 M NaCl (the corresponding spectra not shown).

Figure S1 (A)

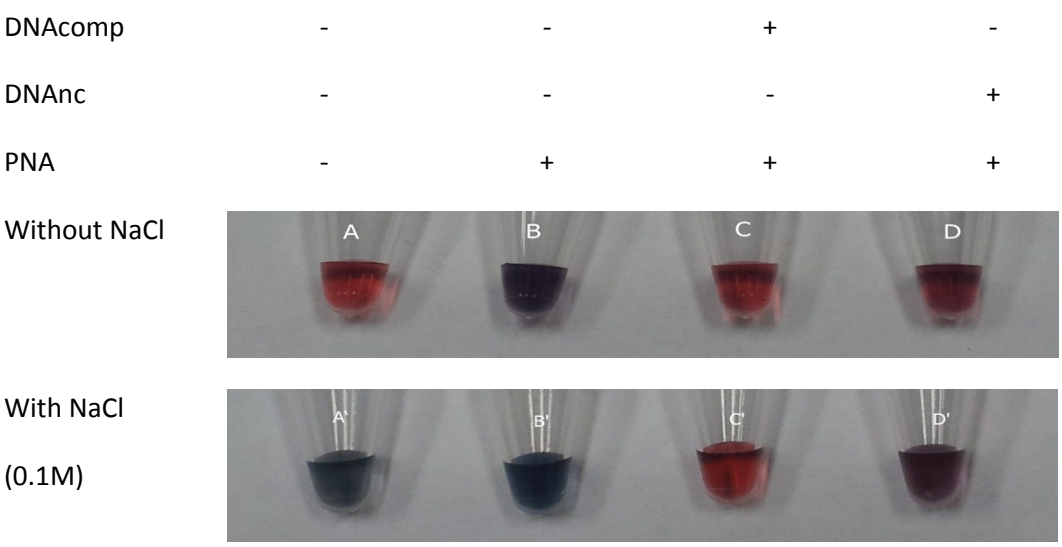

Figure S1 (B)

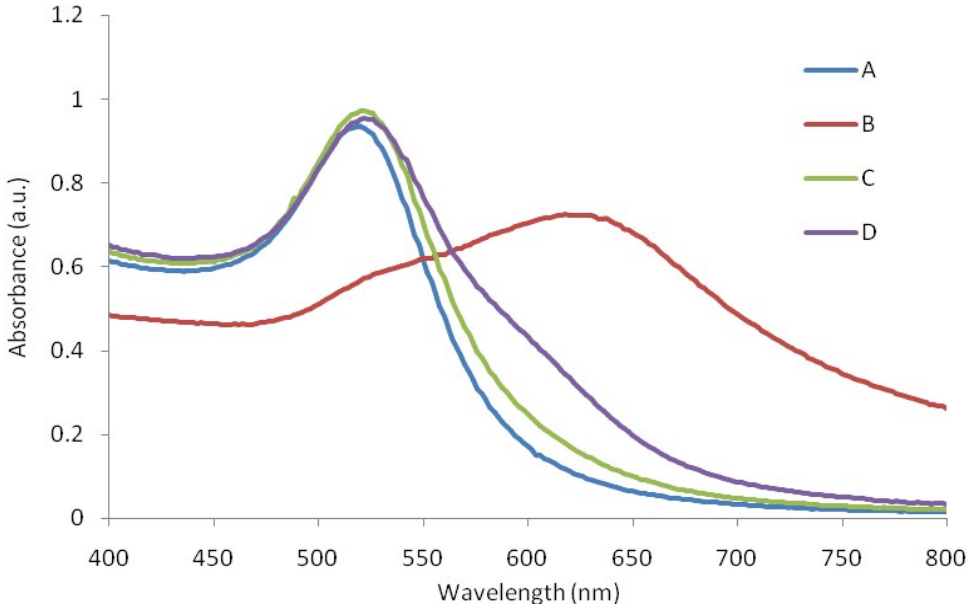

Table S1. PNA and DNA sequences in this study

Name	Codon	Sequences(5’-3’)[a]	Base change	Amino acid change
PNA		CCTACGCCACCAGCTCC		
DNAcomp		GGAGCTGGTGGCGTAGG		
DNAnc		TATTATAAGGCCTGCTG		
m1	12	GGAGCTAGTGGCGTAGG	G129A	Gly12Ser
m2	12	GGAGCTCGTGGCGTAGG	G129C	Gly12Arg
m3	12	GGAGCTTGTGGCGTAGG	G129T	Gly12Cys
m4	12	GGAGCTGATGGCGTAGG	G130A	Gly12Asp
m5	12	GGAGCTGCTGGCGTAGG	G130C	Gly12Ala
m6	12	GGAGCTGTTGGCGTAGG	G130T	Gly12Val
m7	13	GGAGCTGGTTGCGTAGG	G131T	Gly13Cys

[a] Altered bases were underlined.