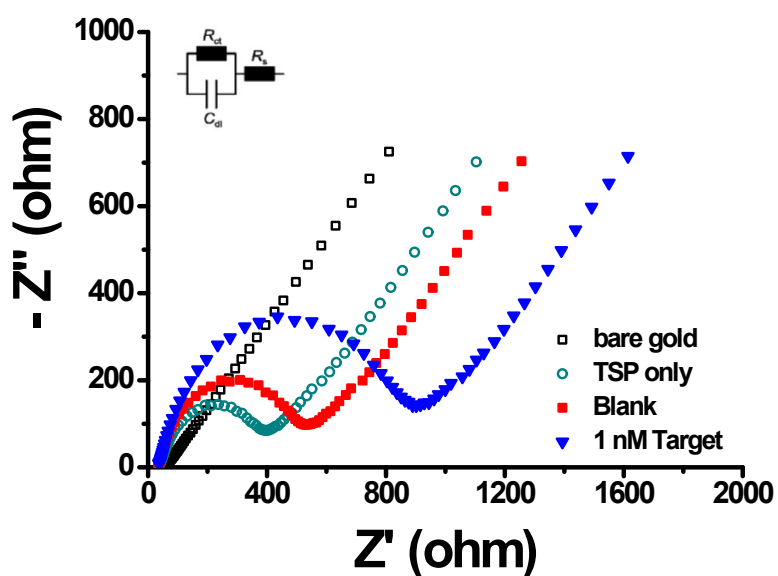
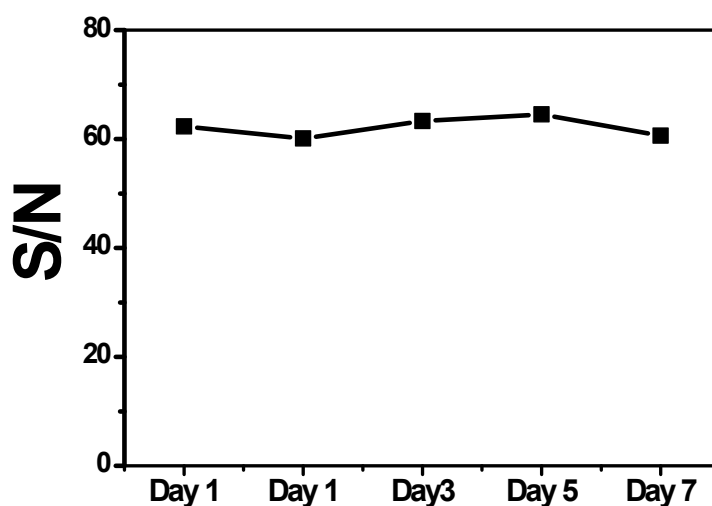


Supporting Information for:

Electrochemical detection of PCR amplicons of Escherichia coli genome based on DNA nanostructural probes and polyHRP enzyme



**Fig. S1** EIS characterization of the assemble process: (a) bare gold, (b) gold electrode modified with TSP probe, (c) TSP probe modified electrode hybridized only with signal probe, (d) TSP probe modified electrode hybridized with signal probe and 1 nM target DNA. The parameters are as following: Init E (V) = 0.248, High Frequency (Hz) =  $1e+5$ , Low Frequency (Hz) = 0.1, Amplitude (V) = 0.005,



**Fig S2.** The stability of the TSP-modified electrode: the electrodes showed stable signal/noise (S/N) for at least 7days under 4 °C storage. The target concentration was 1pM.

**Table S1.** the results of Inter- and Intra-Assay precision test of our biosensor.

	S/N		
	Group 1	Group 2	Group 3
1	61.3	62.3	62.2
2	60.3	62.0	64.7
3	60.0	60.4	63.8
4	64.3	63.4	60.7
5	63.1	61.2	60.1
6	60.8	65.4	61.1
SD(inter assay)	1.5	1.6	1.7
RSD(inter assay)	2.5%	2.6%	2.7%
SD(intra assay)	1.6		
RSD(intra assay)	2.6%		

\*The concentration of the target in this experiment was 1 nM.

SD: standard deviation, RSD: relative standard deviation.

Inter-Assay: results in one group of data.

Intra-assay: results between 3 groups of data.