chemosensors

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Supplementary Material

Sensitive Electrochemical Detection of Tryptophan Using a Hemin/G-Quadruplex Aptasensor

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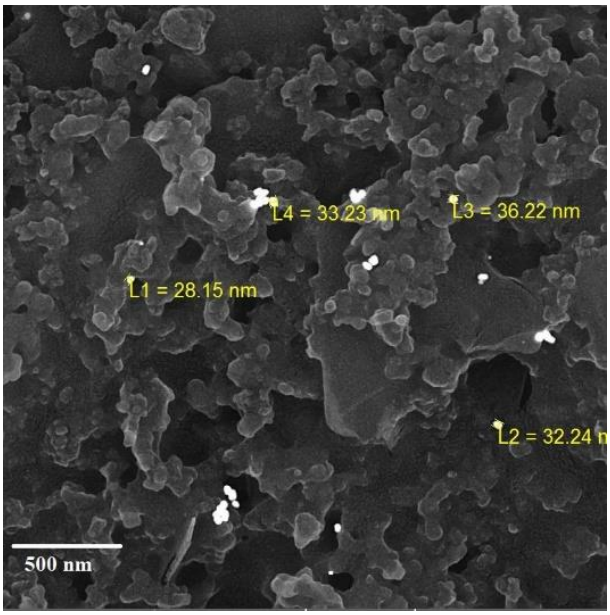

Figure S1. FE-SEM images of AuNPs/SPE. The measured particle size is indicated in yellow color. The scale bar is 500 nm.

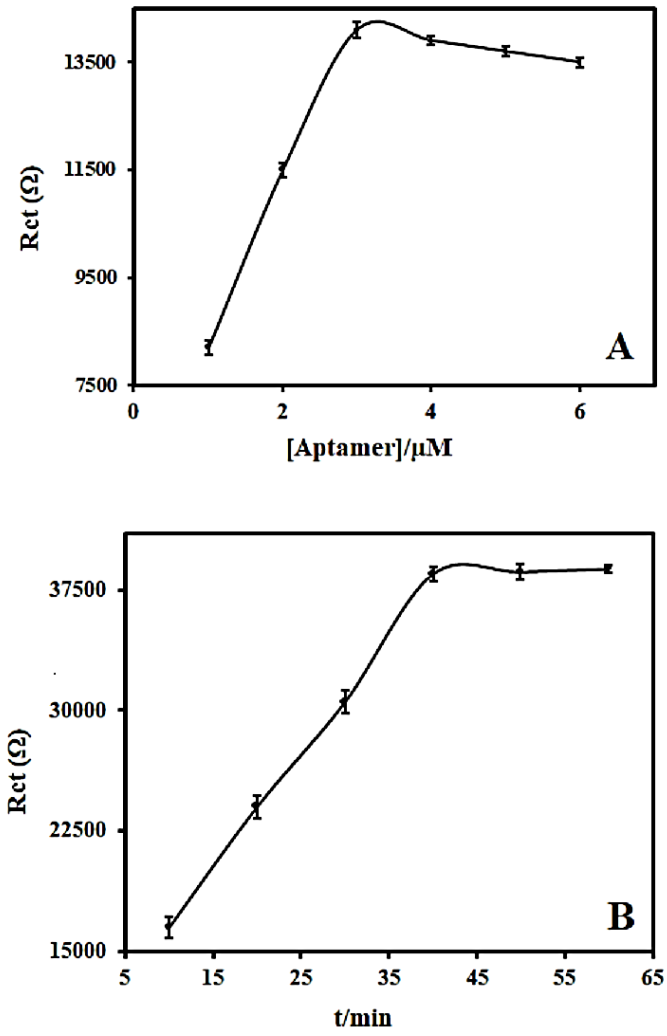

Figure S2. Optimization of the prepared aptasensor (Apt/DGNs/Fe_3O_4@SiO_2/DABCO/SPE). (**A**) Optimization of aptamer concentration for preparation of aptasensor: 1 μM (a), 2 μM (b), 3 μM (c), 4 μM (d), 5 μM (e), and 6 μM (f). (**B**) Optimization of incubation time for the interaction of aptamer (3 μM) with Trp (0.9 nM).

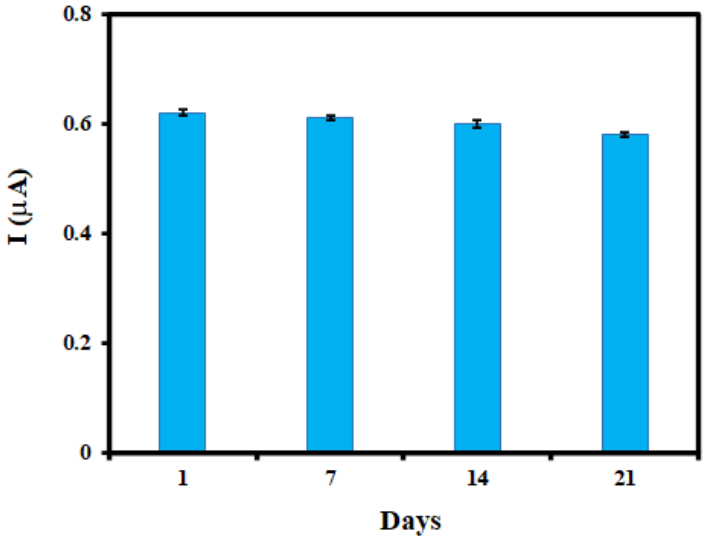

Figure S3. Stability of the prepared aptasensor.

Table S1. Analysis of Trp aptamer sequence by QGRS Mapper software.

Length	Quadruplex forming G-rich sequences (QGRS)	G-Score*
17	GGTTAGGTCAGGTTTGG	21

* The G-score provided by QGRS Mapper is a criterion to forecast how likely QGRS is to form a stable quadruplex structure. It is known that G-quadruplexes with G scores ≥ 19 has a P-value of lower than 0.05, and thus 19 is used as the threshold to identify significant G-quadruplexes.

Table S2. Analysis of human serum samples with Trp at different concentrations.

Sample	Added (nM)	Detected (nM)	CV (%)* (n = 3)	Accuracy (%)
1	0.04	0.036	1.6	10
2	7	6.93	1.2	1
3	100	105	0.9	5

*CV (coefficient of variation).