***Supplementary Information***

**Streptavidin-Modified Iron Oxide Hybrid Nanozymes for Magnetic Enrichment and Bioelectrocatalytic Sensing of Circulating Tumor RNA**

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**Table S1** Primer sequences.

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| Oligos | 5'-Sequence-3' |
| T2:ERG Forward Primer | Bio-C6-CGGCAGGAAGCCTTATCA |
| T2:ERG Reverse Primer | GTTACATTCCATTTTGAT |
| *PCA3* Forward Primer | Bio-C6-CCTGATGATACAGAGGTGAG |
| *PCA3* Reverse Primer | GCACAGGGCGAGGCTCATCG |
| *KLK2* Forward Primer | Bio-C6-GGGGGTCCACTTGTCTGTAA |
| *KLK2* Reverse Primer | GGTGAGTTCCAAGCTTCAGG |

**Key:** Bio-C6-, Biotin modification with 6-carbon spacer.

**Figure S1.** Optimization of isothermal amplification times (5, 10, 15, 20, and 30 min). Error bars represent standard deviations of three technical replicates.

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**Figure S2.** Optimization of electrolyte buffer pH 5.0 – 10.0. Error bars represent standard deviations of three technical replicates.