## **Supplementary material**

## A sensitive gold nanoparticle-based aptasensor for colorimetric

## detection of A $\beta$ (1-40) oligomers

Xu Zhu<sup>a</sup>, Ningning Zhang<sup>b</sup>, Yintang Zhang<sup>a,\*</sup>, Yuanqiang Hao<sup>a</sup>, Baoxia Liu<sup>b</sup>, Zhu

Chang<sup>b</sup>, Yanli Zhou<sup>b</sup>, Baoxian Ye<sup>b</sup>, Maotian Xu<sup>a,b,\*</sup>

<sup>a</sup> Henan Key Laboratory of Biomolecular Recognition and Sensing, College of

Chemistry and Chemical Engineering, Shangqiu Normal University, Shangqiu

476000 (P. R. China).

<sup>b</sup> College of Chemistry and Molecular Engineering, Zhengzhou University, Zhengzhou

450001, China

\* Corresponding authors: Fax/Tel.: +86 370 3109178

E-mail addresses: <u>xumaotian@163.com</u>; <u>ahhh\_cs@163.com</u>



Fig. S1. EDX figure of AuNPs with 80  $\mu$ M Aptamer.



Fig. S2. EDX figure of AuNPs with 80  $\mu$ M Aptamer, 80  $\mu$ M A $\beta$ O.



**Fig. S3.** (1) Dependences of absorption ratio on (a) pH and (b) the concentration of Na<sup>+</sup>. The AuNP solution (2) The AuNP solution with the addition of 80  $\mu$ M aptamer (2) The AuNP solution with the addition of 80  $\Box$ M A $\beta$ O, 80  $\mu$ M aptamerand 50mM Na<sup>+</sup> (c) the order of reagent addition, (1) The AuNP solution(2) AuNP first and then aptamer-A $\beta$ O, finally saline. (3) AuNP first and then aptamer followed by saline, finally A $\beta$ O. (4) AuNP first and then saline, finally aptamer-A $\beta$ O. (d) incubation time on the spectral features of the colorimetric assay.