

Supplementary Material

LSPR-based Aptasensor for Rapid Urinary Detection of NT-proBNP

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S.1. Characterization of AuNPs

Table S1: pH, Zeta potential, hydrodynamic diameter (HD) and PDI of AuNPs as synthesized.

pH	Zeta potential (mV)	HD (nm)	PDI
5.7	- 66.4±1.7	21.6 ± 0.5	0.272

S.2. Detection of NT-proBNP using aptamer and AuNPs

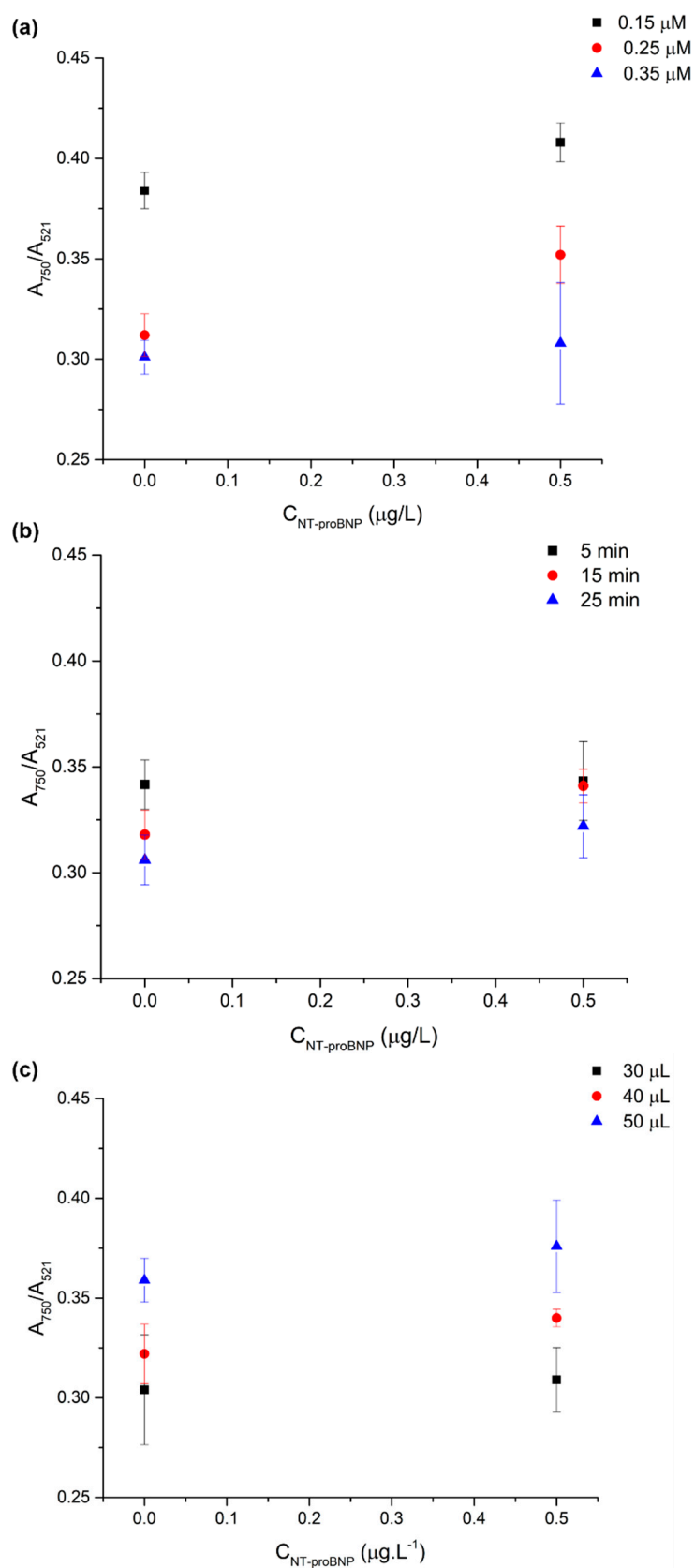


Figure S1: Effect of (a) concentration of aptamer, (b) time of incubation and (c) volume of NaCl in the A_{750}/A_{521} ratio in NT-proBNP detection.

S.3. Interaction of aptamer with NT-proBNP

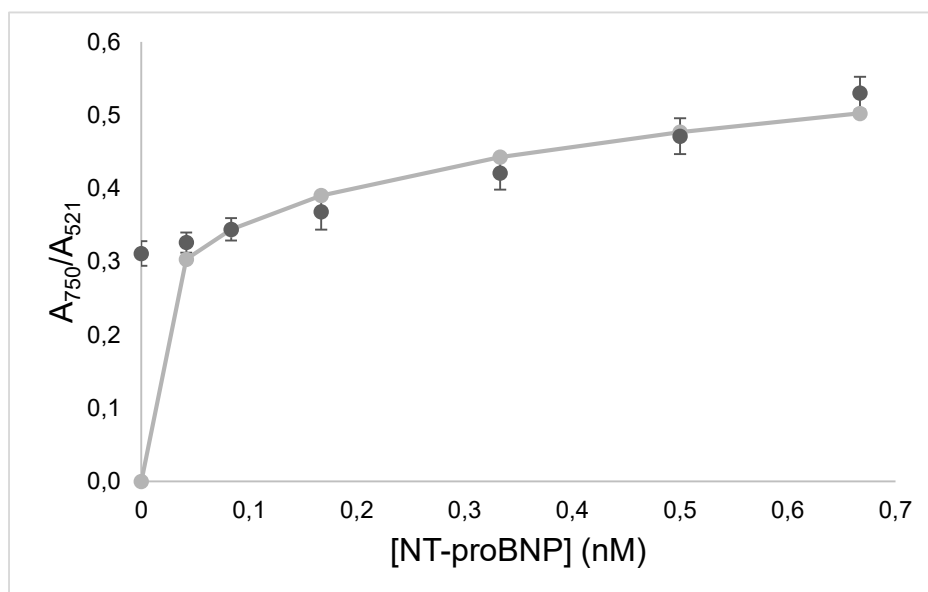


Figure S2: Fitting curve (solid line) of Hill equation for determining k_d .

$$Y = \frac{B_{max} \cdot X^n}{k_d^n + X^n} \quad (S1)$$

Equation S1 is the Hill equation where Y presents for the A_{750}/A_{521} , X is the initial concentration of NT-proBNP in nM, B_{max} is the maximum specific binding in nm, n is the Hill coefficient and k_d is the apparent dissociation constant.

S4. Effect of biofluids on NT-proBNP detection

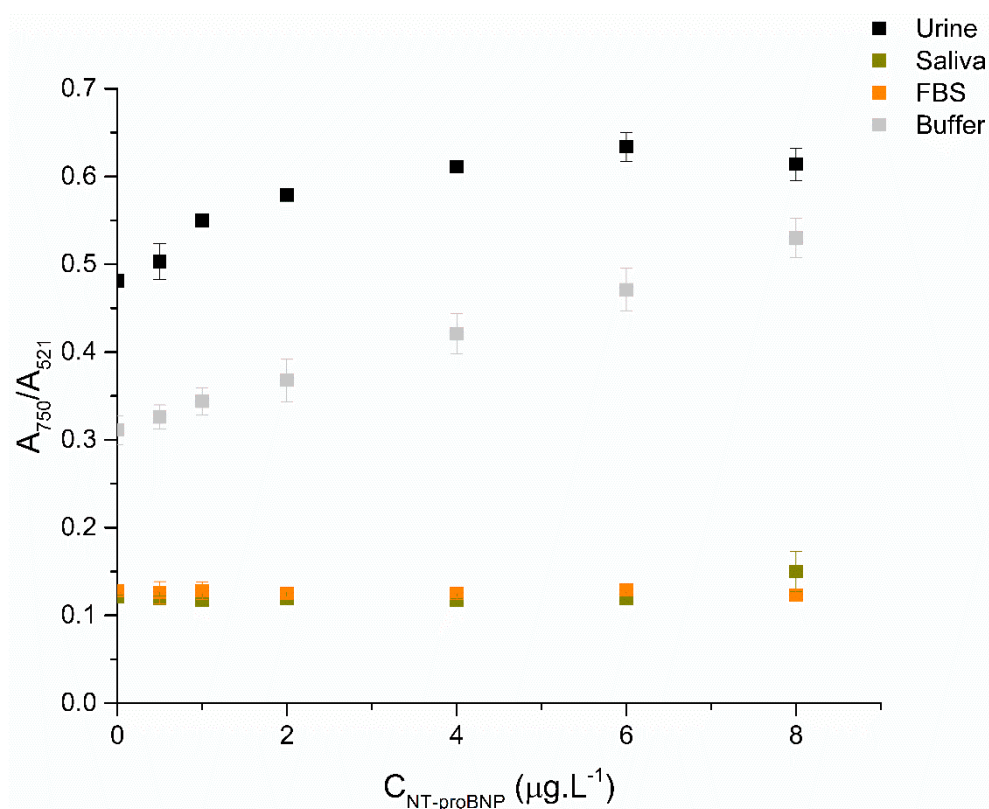


Figure S3: Plot of the aggregation ratio versus NT-proBNP concentration in spiked urine saliva and FBS.

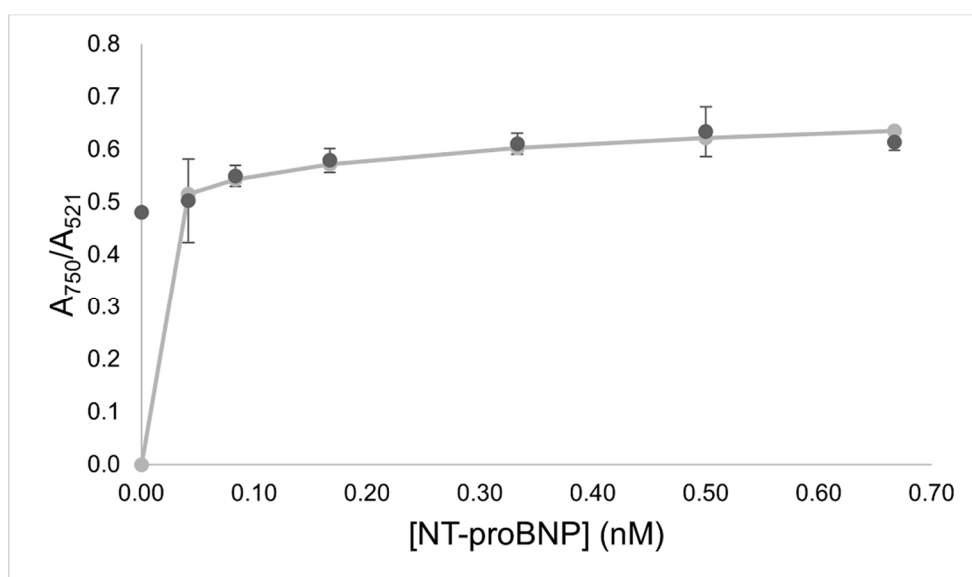


Figure S4: Curve fitting (solid line) of the Hill equation to determine the dissociation constant (k_d) for the interaction between Apt and NT-proBNP in urine.