Supporting information

Sensitive Detection of Formamidopyrimidine–DNA Glycosylase Activity Based on Target-induced Self-Primed Rolling Circle Amplification and Magnetic Nanoprobe

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Experimental section: FPG detection in the diluted human serum

The samples from some volunteers were collected from Liaocheng People's Hospital. Previously the fresh serum samples were first analyzed by the ELISA method (UnicelDXC800, Beckman Coulter auto-analyzer) in Liaocheng People's Hospital. And then, the samples were re-assayed with the proposed method. Fresh serum samples were centrifuged at 5400 rcf for 10 min. The supernatant was saved. All the samples were previously diluted in an appropriate extension (1: 10 000) to first the concentration of the analyte within the linear range of the calibration curve. All experiments were performed in compliance with the guideline "Biomedical research ethics review method involving people" (China), and approved by the medical ethics committee at Liaocheng People's Hospital. Informed consents were obtained from human participants of this study. The results (Table S1 in the ESI†) showed a good agreement between the expected and observed values.



Fig. S1. Effect of the duplex DNA probe concentration on the fluorescence intensities of the sensing system. Each experiment was repeated for three times, which was a representative experiment.



Fig. S2. Effect of RCA reaction time on the fluorescence intensities of the sensing system. Each experiment was repeated for three times, which was a representative experiment.



Fig. S3. Effect of FAM- probe concentration on the fluorescence intensities of sensing system. Each experiment was repeated for three times, which was a representative experiment.



Fig. S4. Effect of BP probe concentration on the relative fluorescence intensities of the sensing system. Each experiment was repeated for three times, which was a representative experiment.

Added	Measured	Recovery(%)	RSD(%)
FPG (U/ml)	FPG (U/ml)		
2	2.04	102.0	3.5
16	15.85	99.1	3.1
20	20.01	100.1	2.7
40	37.92	94.8	4.5

Table S1. Determination of FPG activity in diluted human serum by the proposed biosensor