Electronic Supplementary Material (ESI) for Analytical Methods.

Supplementary Information

Facile fabrication of "off-on" photoelectrochemical aptasensor for kanamycin detection based on polypyrrole/CeO_2

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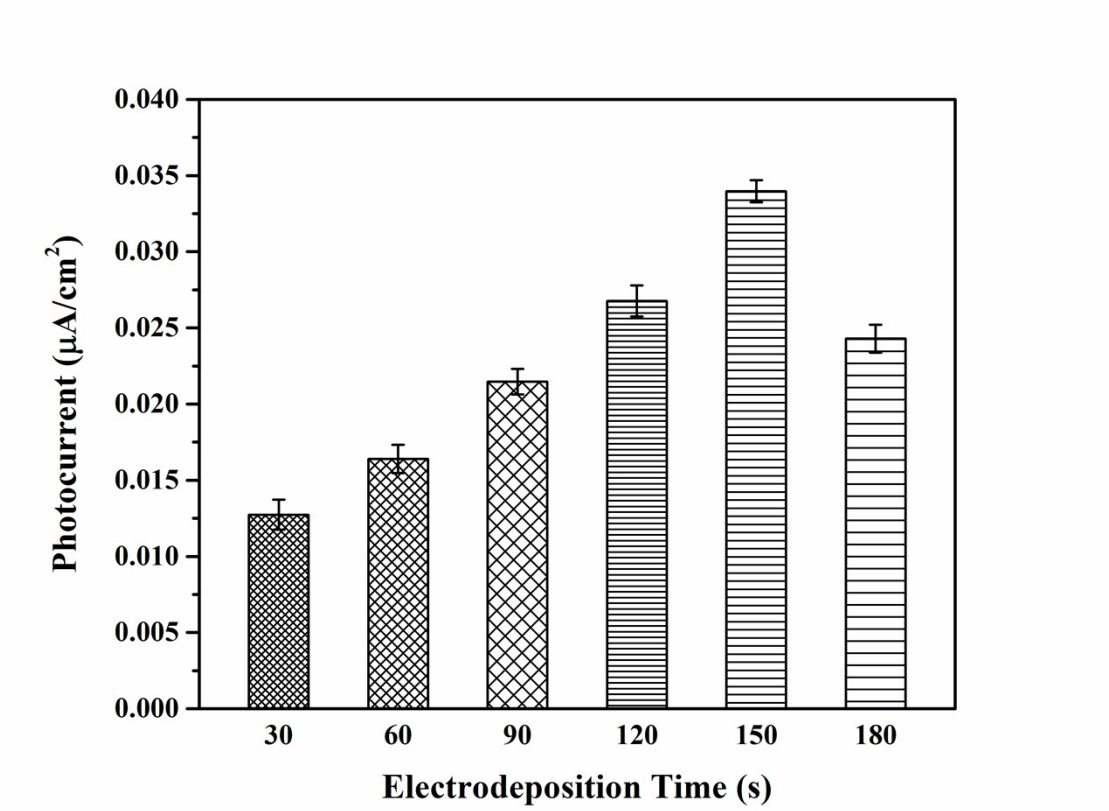

Fig. S1 Effects of CeO_2 deposition time on the photocurrent responses

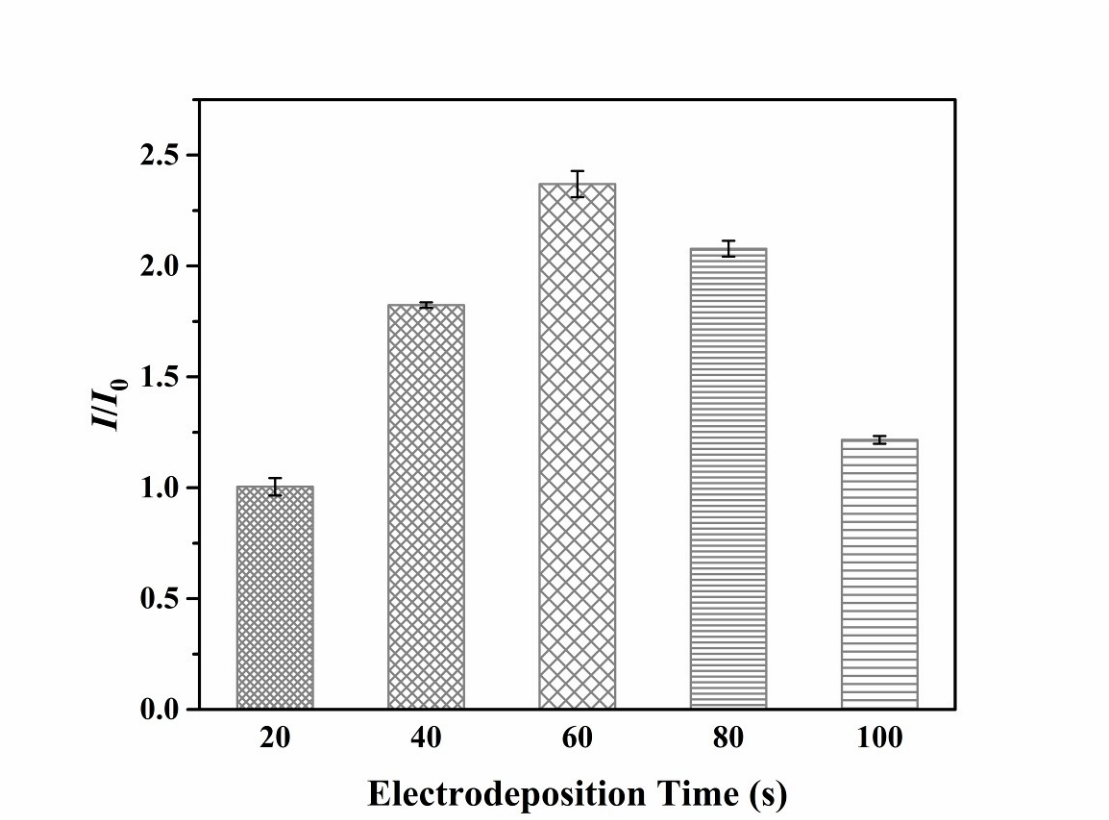

Fig. S2 Effects of polypyrrole deposition time on the photocurrent responses

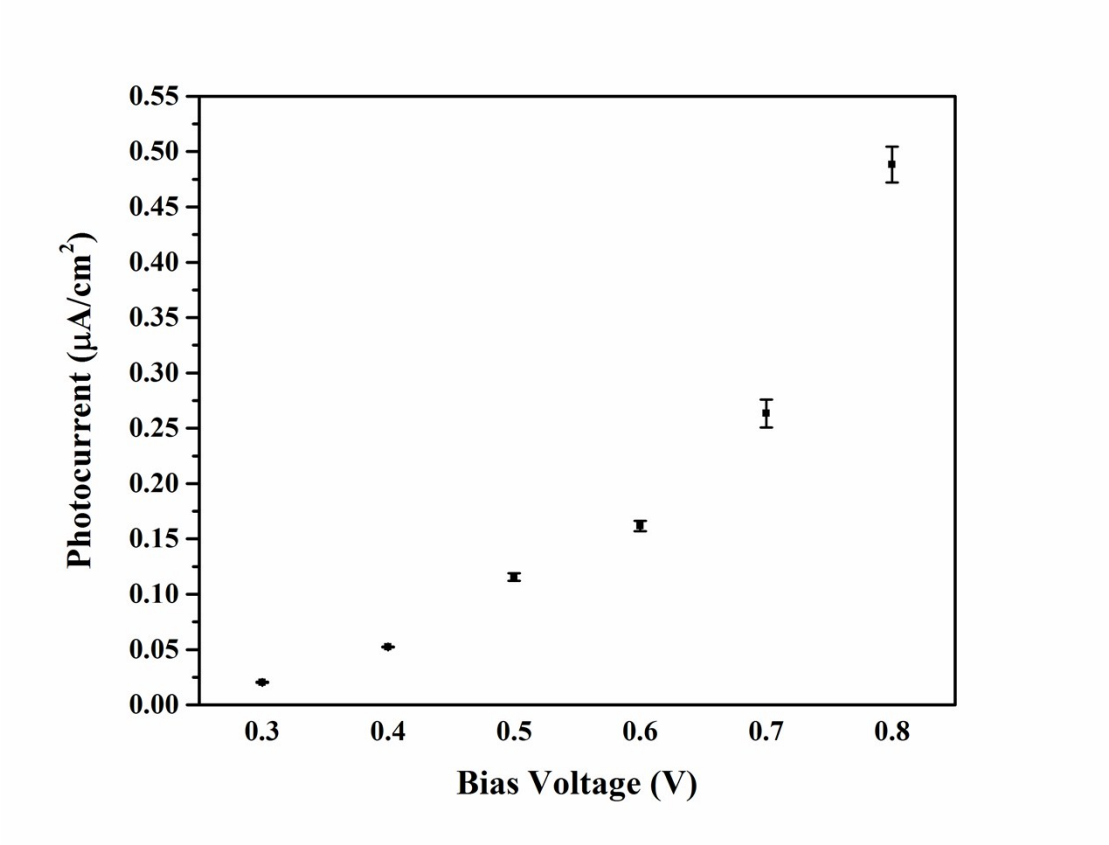

Fig. S3 Influences of bias potential on PEC responses of apt/Au/Ppy/CeO_2/ITO

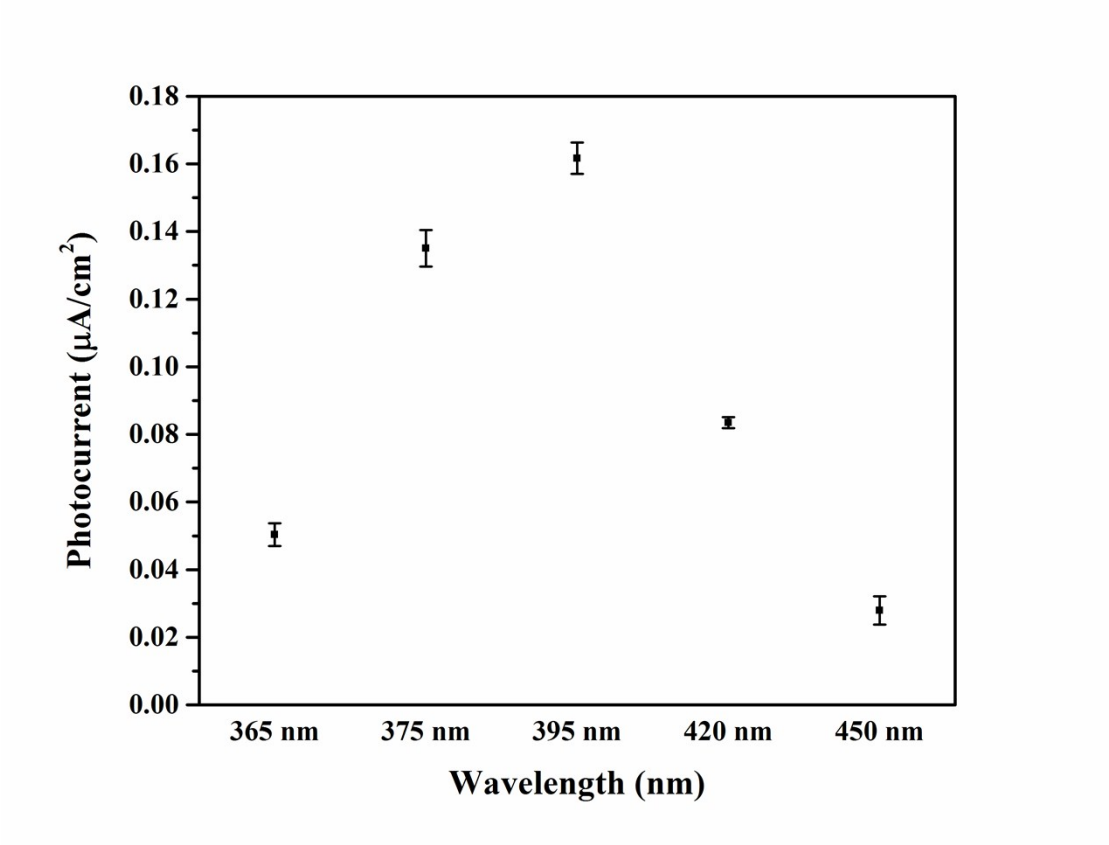

Fig. S4 Influences of the wavelength of exciting light on PEC responses of apt/Au/Ppy/CeO_2/ITO

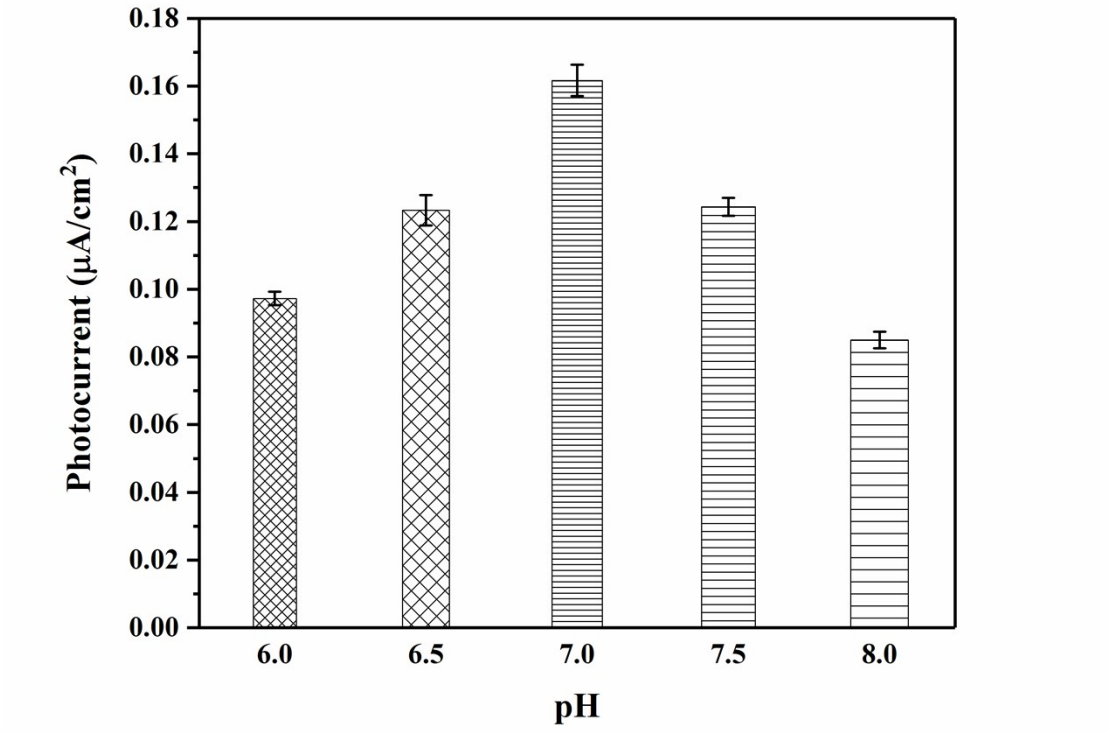

Fig. S5 Optimization of electrolyte pH

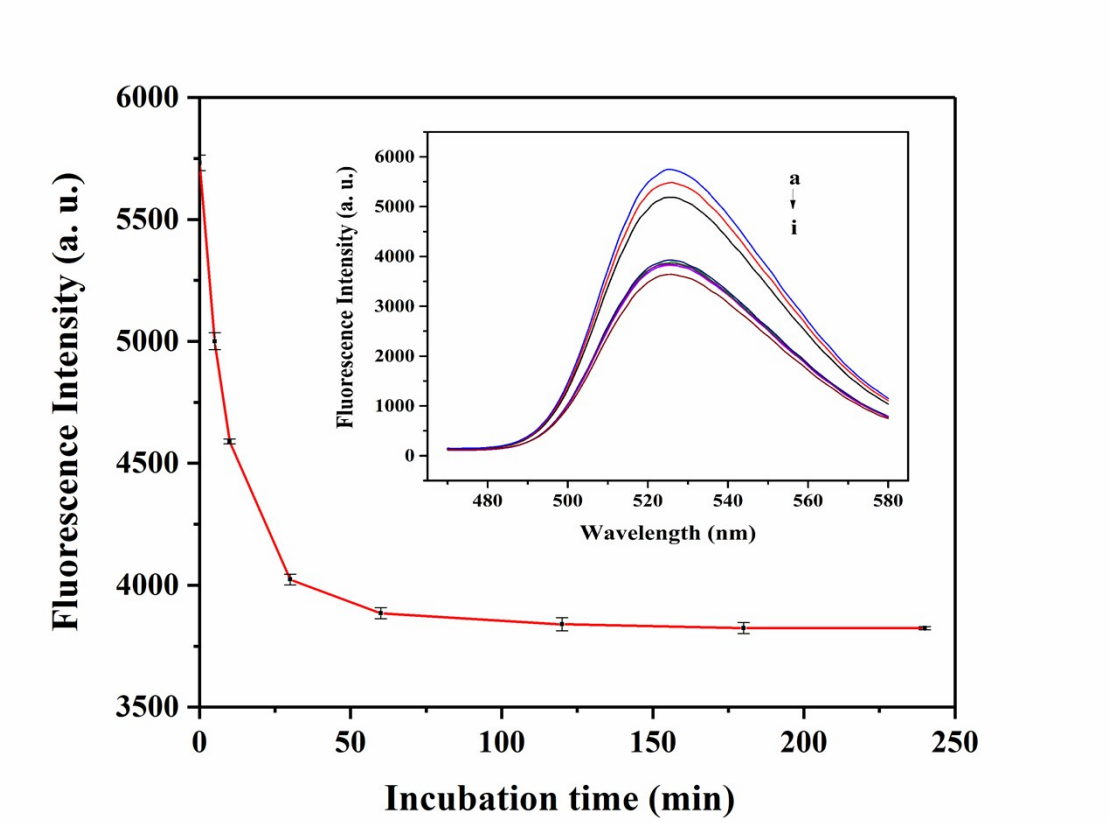

Fig. S6 Optimization of incubation time. Inset: Effects of incubation time on fluorescence responses (a) 0 min, (b) 5 min, (c) 10 min, (d) 30 min, (e) 60 min, (f) 120 min, (g) 180 min, (h) 240 min. (i) sterile water combines with 4S Green Plus.

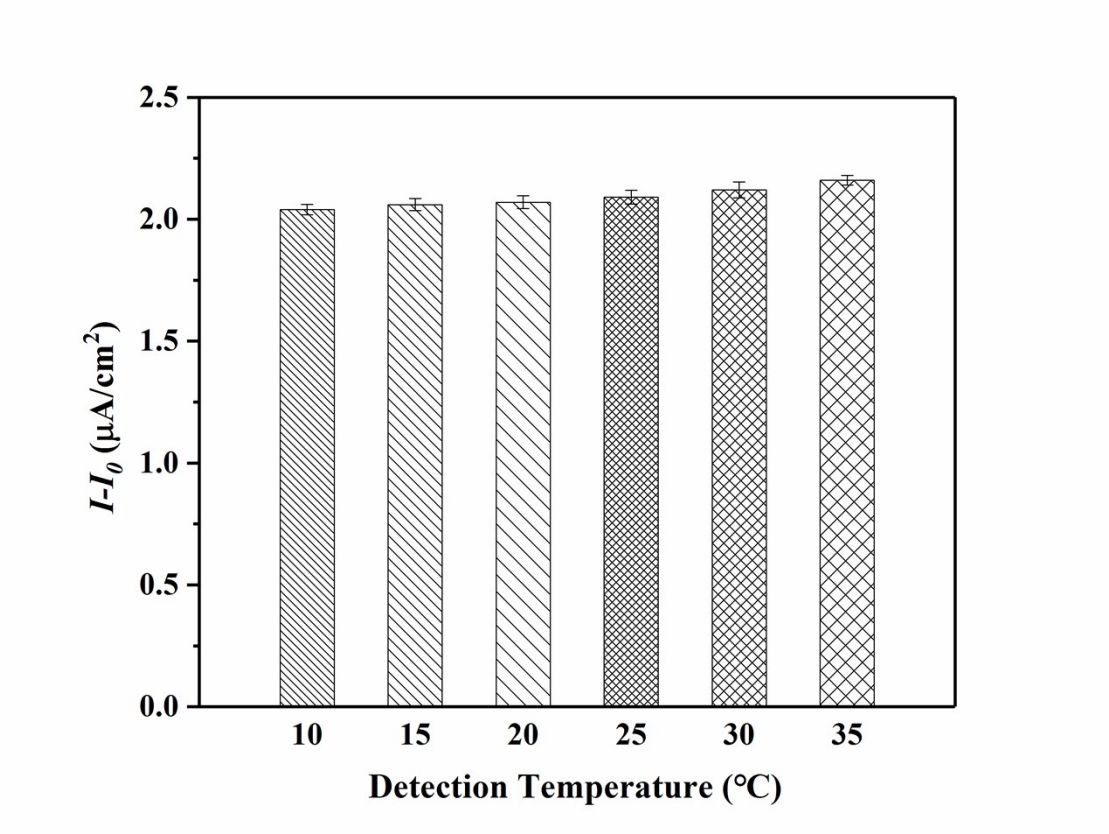

Fig. S7 Optimization of detection temperature.

Table S1 Comparison of different methods for kanamycin determination

Detection methods	Liner range (μg/L)	Detection limit (μg/L)	Reference
Electrochemiluminescence	2 ~ 100	0.67	[1]
Electrochemiluminescence	8.7×10^{-2} ~ 9.9×10^{7}	2.6×10^{-2}	[2]
Colorimetry	200 ~ 2000	39	[3]
Colorimetry	50 ~ 600	2.6	[4]
Fluorescence	0.174 ~ 26.1	0.070	[5]
Fluorescence	0.29 ~ 11.6	0.13	[6]
Electrochemistry	0.010 ~ 150	0.005	[7]
Electrochemistry	0.0005 ~ 50	0.00042	[8]
Photoelectrochemistry	0.58 ~ 134	0.12	[9]
Photoelectrochemistry	0.12 ~ 117	0.06	[10]
Photoelectrochemistry	0.5 ~ 200	0.2	This work

References

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