

Electronic Supplementary Information

UiO-66-NH₂ based fluorescent sensing for detection of tetracyclines in milk

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Supplementary Figures and Tables

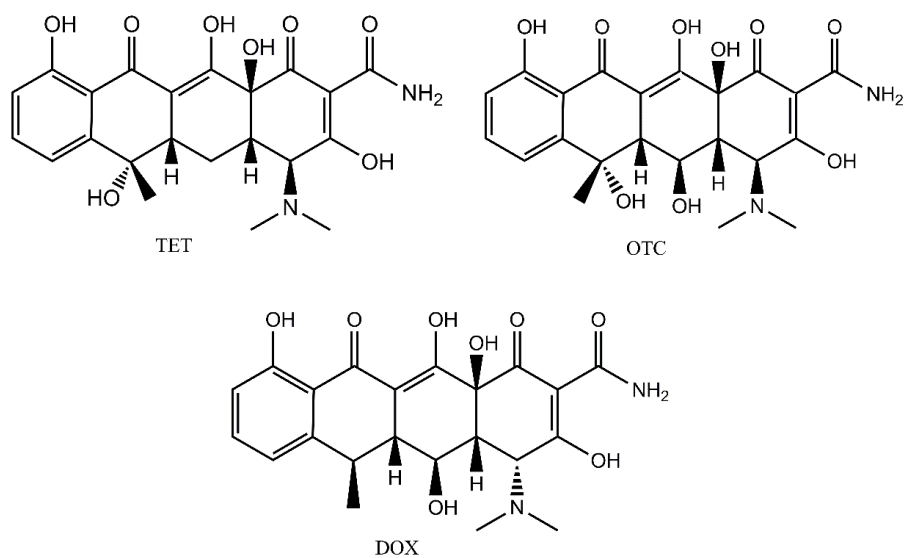


Fig.S1. Chemical structural formulas of TET, OTC, and DOX.

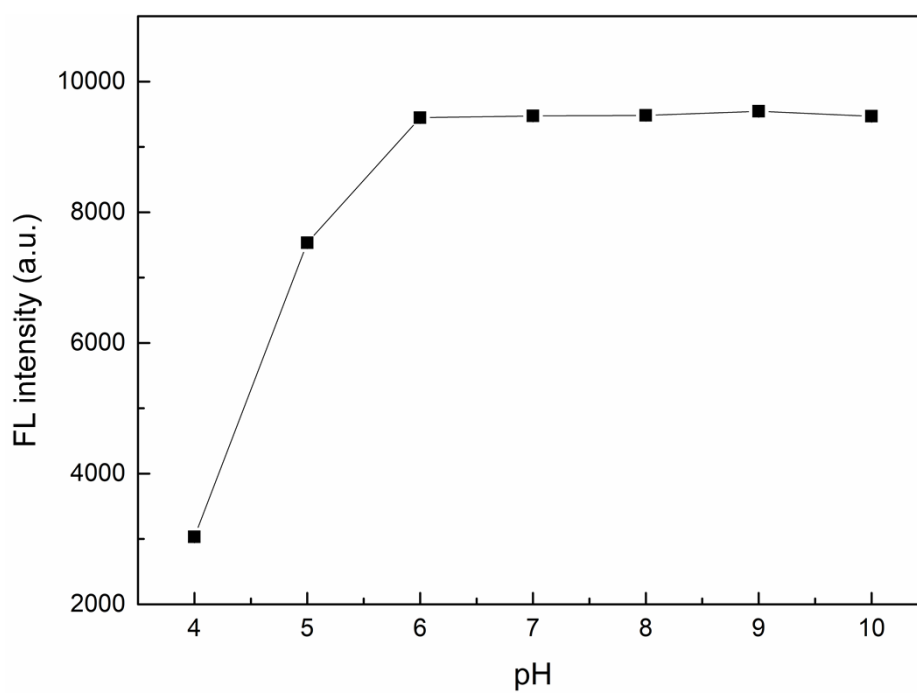


Fig.S2. The effect of pH on the fluorescence intensity of UiO-66-NH₂.

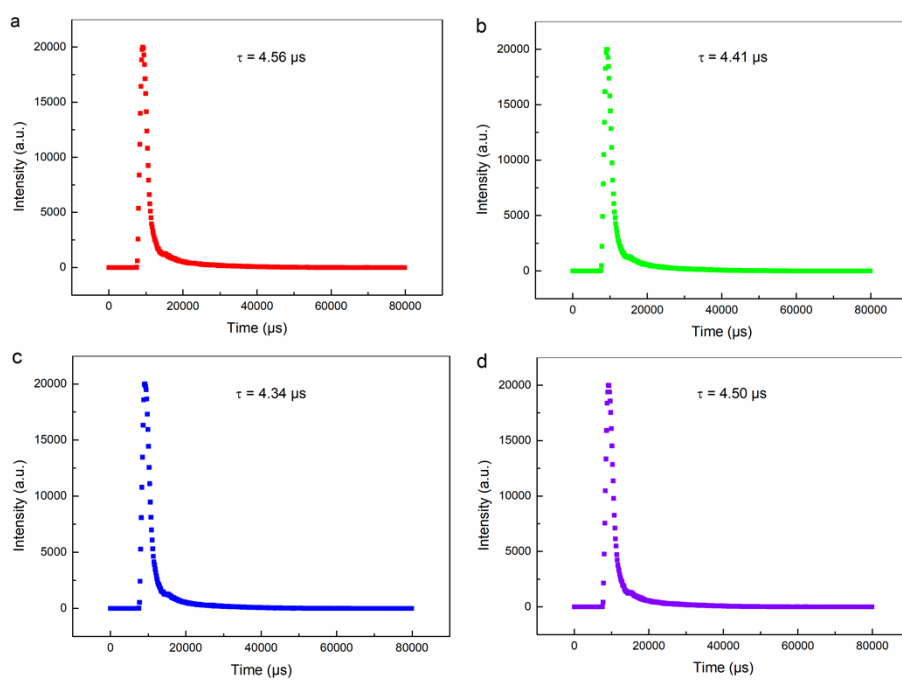


Fig. S3. Fluorescence emission decay curves of (a) UiO-66-NH₂ alone, (b) UiO-66-NH₂ +TET, (c)

UiO-66-NH₂ +OTC, and (d) UiO-66-NH₂ +DOX.

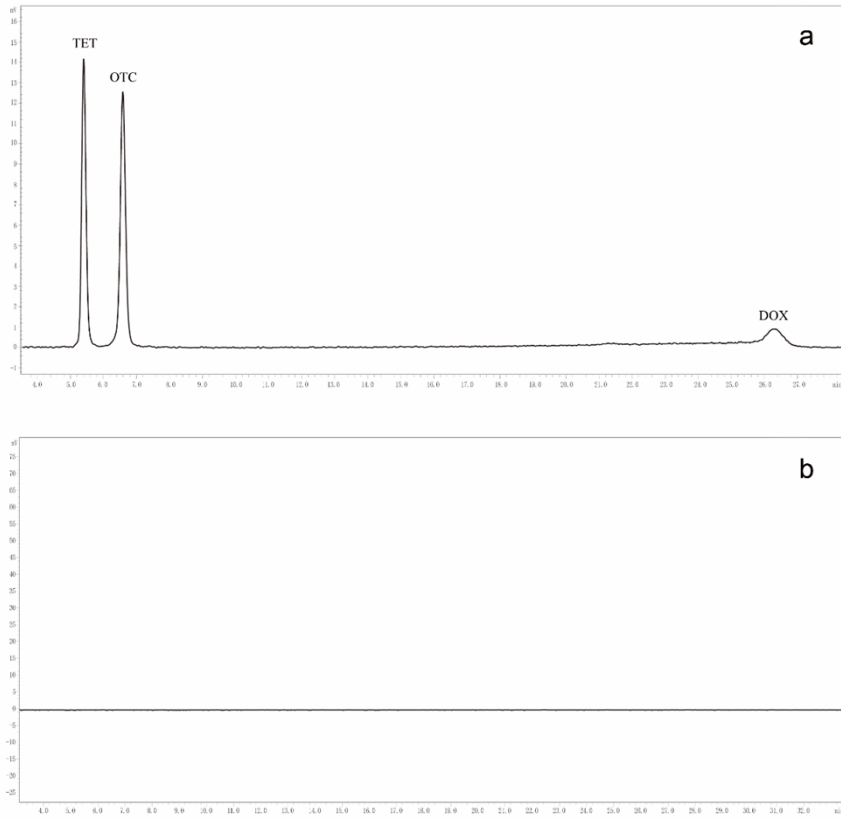


Fig.S4. Representative chromatogram of standard samples containing TET, OTC and DOX (a);

Chromatogram of milk sample (b).

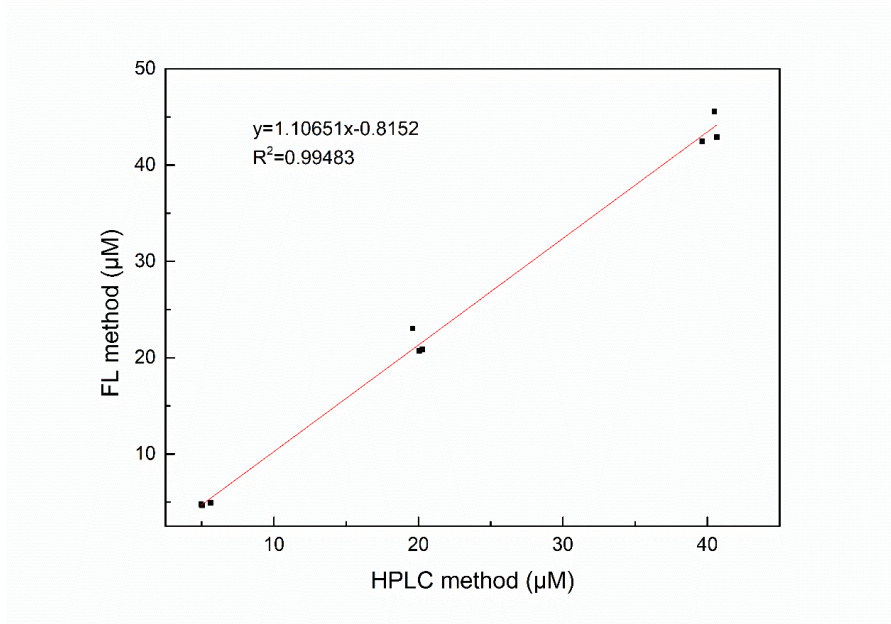


Fig.S5. The linear relationship between HPLC method and fluorescence method.

Table S1 The intra- and inter-day precisions of the assay (n = 6)

TCs	Spiked (μM)	Intra-day (n = 6) ^a			Inter-day (n = 6) ^b		
		Detected Concentration (μM)	RSD (%, n = 6)		Detected Concentration (μM)	RSD (%, n = 6)	
TET	5	4.822 \pm 0.089	1.85		4.961 \pm 0.123	2.48	
	20	20.748 \pm 0.244	1.17		20.400 \pm 0.298	1.46	
	40	40.091 \pm 0.379	0.95		39.932 \pm 0.361	0.90	
OTC	5	4.996 \pm 0.170	3.40		4.911 \pm 0.162	3.29	
	20	20.082 \pm 0.166	0.83		20.003 \pm 0.204	1.02	
	40	39.625 \pm 0.415	1.05		39.992 \pm 0.459	1.15	
DOX	5	4.926 \pm 0.111	2.24		4.946 \pm 0.119	2.41	
	20	19.970 \pm 0.125	0.63		19.924 \pm 0.149	0.75	
	40	40.113 \pm 0.724	1.80		40.442 \pm 0.906	2.24	

^a Intra-day precision: the average value of six repeated tests in the same day

^b Inter-day precision: the average value of the same experiment in six days

Table S2 Detection of TCs in milk samples by UiO-66-NH₂ sensor and HPLC

TCs	Spiked (μM)	UiO-66-NH ₂			HPLC		
		Found	Recovery	RSD	Found	Recovery	RSD
		(μM)	(%)	(%,n= 3)	(μM)	(%)	(%,n= 3)
TET	0	0	-	-	0	-	-
	5	4.932 \pm 0.096	98.63	1.95	5.623 \pm 0.001	112.46	0.03
	20	20.859 \pm 0.298	104.29	1.43	20.277 \pm 0.014	101.39	0.07
	40	45.551 \pm 0.238	113.88	0.52	40.483 \pm 0.018	101.21	0.04
OTC	0	0	-	-	0	-	-
	5	4.663 \pm 0.111	93.26	2.38	5.042 \pm 0.006	100.84	0.12
	20	20.718 \pm 0.579	103.59	2.79	20.051 \pm 0.042	100.25	0.21
	40	42.911 \pm 0.216	107.28	0.50	40.655 \pm 0.040	101.64	0.10
DOX	0	0	-	-	0	-	-
	5	4.786 \pm 0.079	95.71	1.65	4.960 \pm 0.021	99.21	0.42
	20	23.033 \pm 0.672	115.17	2.92	19.597 \pm 0.036	97.99	0.19
	40	42.448 \pm 0.403	106.12	0.95	39.638 \pm 0.020	99.09	0.05