

## Supplementary material

### Colorimetric Paper-Based Test Strip for Detection of Methylparaben in Nonconforming Health Care Products



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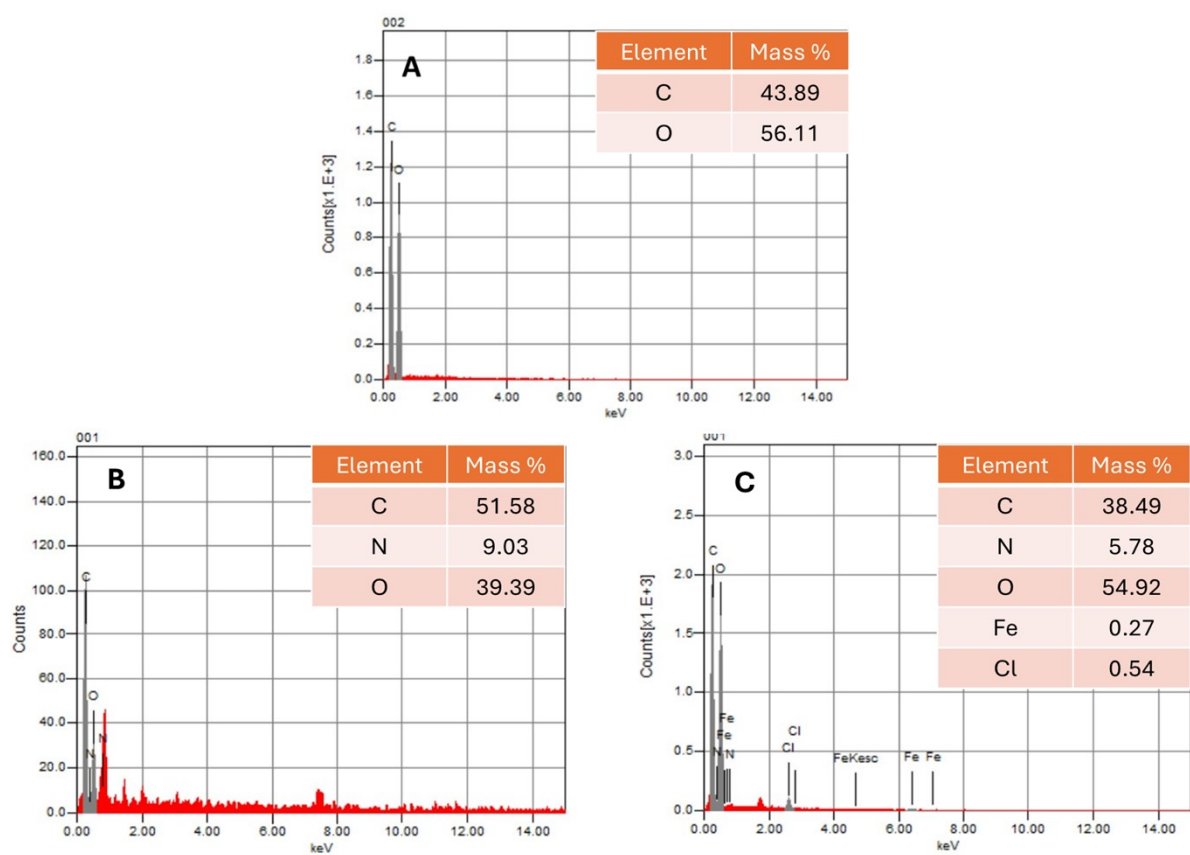
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	A	B
Drop shape		
WCA	76.68°	43.43°

**Fig. S1.** Photos and water contact angle (WCA) of CS-coated paper (A) and Fe<sup>3+</sup>@CS-coated paper (B) using 100 μL distilled water.



**Fig. S2.** EDX-SEM spectra of (A) uncoated paper and (B) CS-coated paper (C) Fe<sup>3+</sup>@CS-coated paper.

**Table S1.** Accuracy of the proposed test strip/ smartphone and colorimetric method for determination of the MPB

Method	Conc. added (mg/mL)	Conc. found (mg/mL) (n=3)	% recovery	Mean % recovery $\pm$ SD
<b>Test strip/ Smartphone</b>	30	32.01	106.7	101.44 $\pm$ 4.56
		29.66	98.86	
		29.63	98.76	
	40	39.44	98.6	97.80 $\pm$ 0.69
		38.96	97.4	
		38.96	97.4	
	50	48.98	97.96	100.86 $\pm$ 2.50
		50.97	101.97	
		51.33	102.66	
<b>Colorimetry</b>	25	25.04	100.16	100.45 $\pm$ 0.79
		24.96	99.84	
		25.34	101.36	
	35	35.29	100.83	99.66 $\pm$ 1.15
		34.49	98.54	
		34.87	99.63	
	45	45.11	100.24	100.31 $\pm$ 0.64
		45.44	100.98	
		44.87	99.71	

**Table S2.** Intra- and inter-day precision results for determination of MPB using the proposed test strip/ smartphone and colorimetric methods

Method	Conc. added (mg/mL)	Intraday precision			Inter-day precision		
		Conc. found (mg/mL) $\pm$ SD (n=9)	(mg/mL) mean recovery $\pm$ SD	%RSD	Conc. found $\pm$ SD (n=9)	% recovery $\pm$ SD	Mean $\pm$ %RSD
Test strip/ smartphone	30	30.43 $\pm$ 1.36	101.44 $\pm$ 4.55	4.55	29.97 $\pm$ 1.49	99.91 $\pm$ 1.35	1.36
	40	39.12 $\pm$ 0.27	97.8 $\pm$ 0.69	0.69	40.04 $\pm$ 1.96	100.10 $\pm$ 2.05	2.05
	50	50.42 $\pm$ 1.26	100.86 $\pm$ 2.53	2.53	49.97 $\pm$ 1.40	99.95 $\pm$ 0.81	0.81
Colorimetry	25	25.11 $\pm$ 1.03	100.45 $\pm$ 0.79	0.79	25.04 $\pm$ 0.24	100.16 $\pm$ 0.24	0.25
	35	34.88 $\pm$ 0.94	99.66 $\pm$ 1.15	1.15	34.88 $\pm$ 0.31	99.68 $\pm$ 0.29	0.29
	45	45.14 $\pm$ 1.22	100.31 $\pm$ 0.64	0.64	45.04 $\pm$ 0.52	100.10 $\pm$ 0.17	0.18

