

Curcumin – A natural colorant-based colorimetric pH indicator for molecular diagnostics

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Table S1. Target genes and their primer sequences used in this study.

Target gene	Primer	Primer sequences (5'-3')
<i>katA</i> gene (<i>S. aureus</i>)	LF	CCGTATCACCATCAATCGCTTTAAT
	F3	AACAGTATATAGTGCAACTTCAA
	B3	CTTTGTCAAACCTCGACTTCAA
	FIP	TGTCATTGGTTGACCTTTGTACATTAAAATTACATAAAG AACCTGCGA
	BIP	GTTGATACACCTGAAACAAAGCATCATTTTTTTTCGTAA ATGCACTTGC
<i>ply</i> gene (<i>S. pneumoniae</i>)	LB	CGATCGTGCTCCGATGACTT
	F3	AAAGAAGCGGAGCTGTC
	B3	TCCACTTGGAGAAAGCTATC
	FIP	ACTACGAGAAGTGCTCCAGGTGATATTTCTGTAACAGC TACCAA
	BIP	AATCCCACTCTTCTTGCGGTGCTACTTGCCAAACCAGG

Table S2. Comparative analysis between the introduced method and other relevant techniques for infectious microorganism identification.

Target analyte	Dye	Linear range	LOD	Sample	Ref
<i>E. coli</i>	Xylenol orange	–	1 CFU	Milk	1
<i>E. coli</i>	Phenol red	–	1×10^3 CFU	Saliva	2
<i>S. aureus</i>	Cresol-red	$5.4 \times 10^4 - 5.4$ copy/ μ L	5.4 copy/ μ L	Fish	3
<i>E. hepatopenaei</i>	Phenol red	–	10 copies	Shrimp	4
<i>S. aureus</i>	Phenol red	$10^2 - 10^7$ CFU	10^4 CFU	–	5
<i>Salmonella</i>	Phenol red	$10^2 - 10^8$ CFU/mL	1.6 CFU	Egg	6
<i>S. aureus</i>	Curcumin	1 ng/ μ L – 0.1 pg/ μ L	10 fg/ μ L	–	This work
<i>S. pneumoniae</i>	Curcumin	1 ng/ μ L – 1 pg/ μ L	1 pg/ μ L	–	This work

References:

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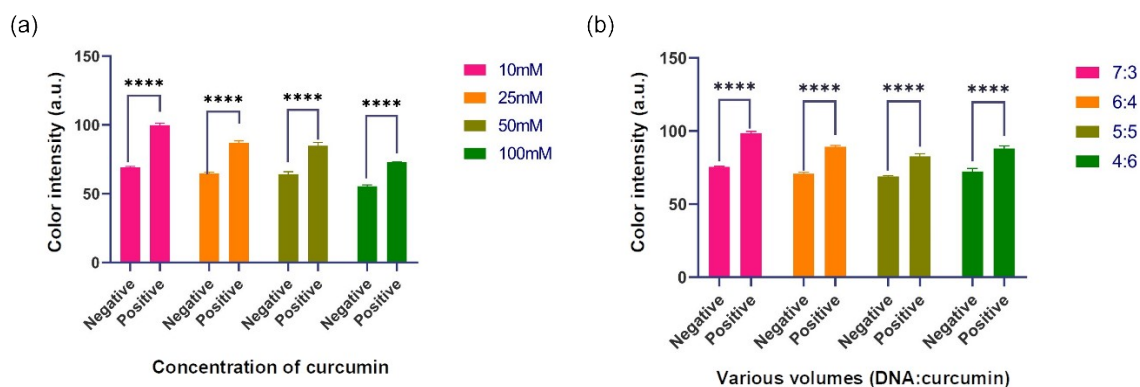


Fig. S1 Results showing statistical analysis for (a) various concentrations of curcumin, and (b) various volume ratios. **** denotes significant differences ($p \leq 0.0001$).

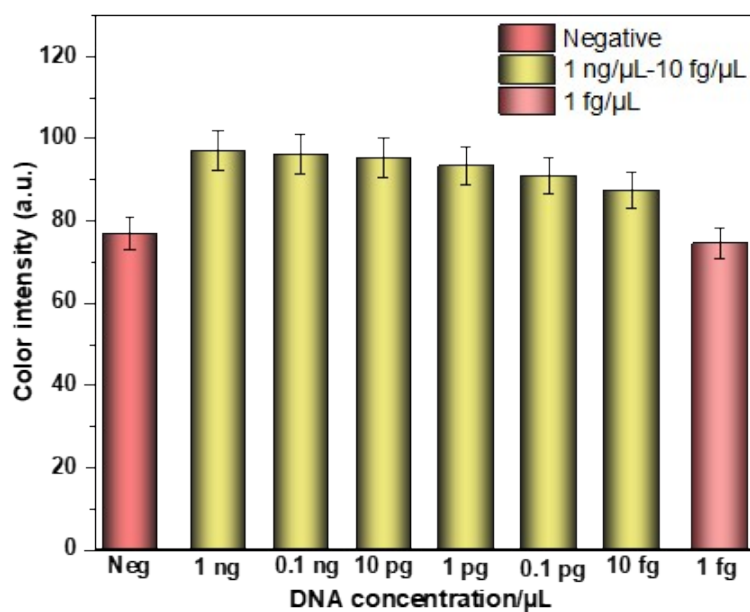


Fig. S2 Results showing the sensitivity of the curcumin-mediated pH-based colorimetry method for the detection of *S. aureus* using grayscale analyses.

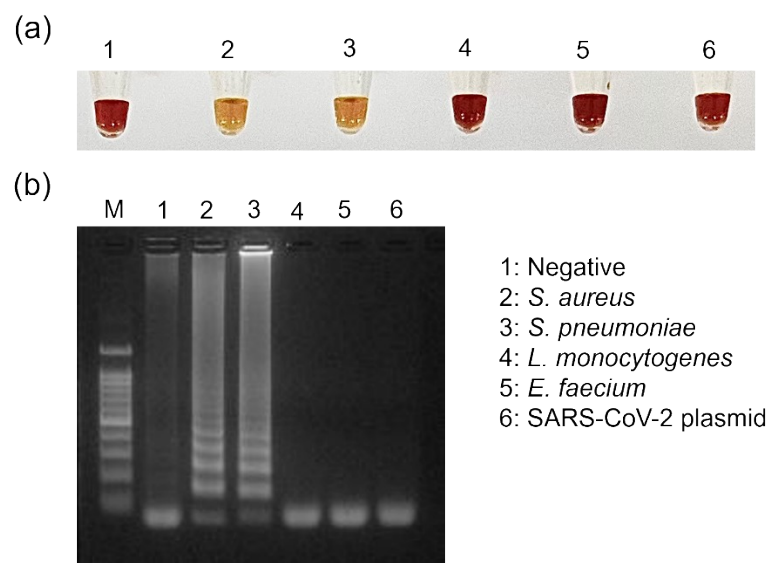


Fig. S3 Results showing the specificity of the introduced method for the detection of infectious pathogens such as *S. aureus* and *S. pneumoniae* obtained by (a) curcumin-based colorimetry, and (b) agarose gel electrophoresis.