

Electronic Supplementary Information (ESI)

Simple, rapid, sensitive, selective and label-free lincomycin detection by using HAuCl₄ and NaOH

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Supplementary Figures

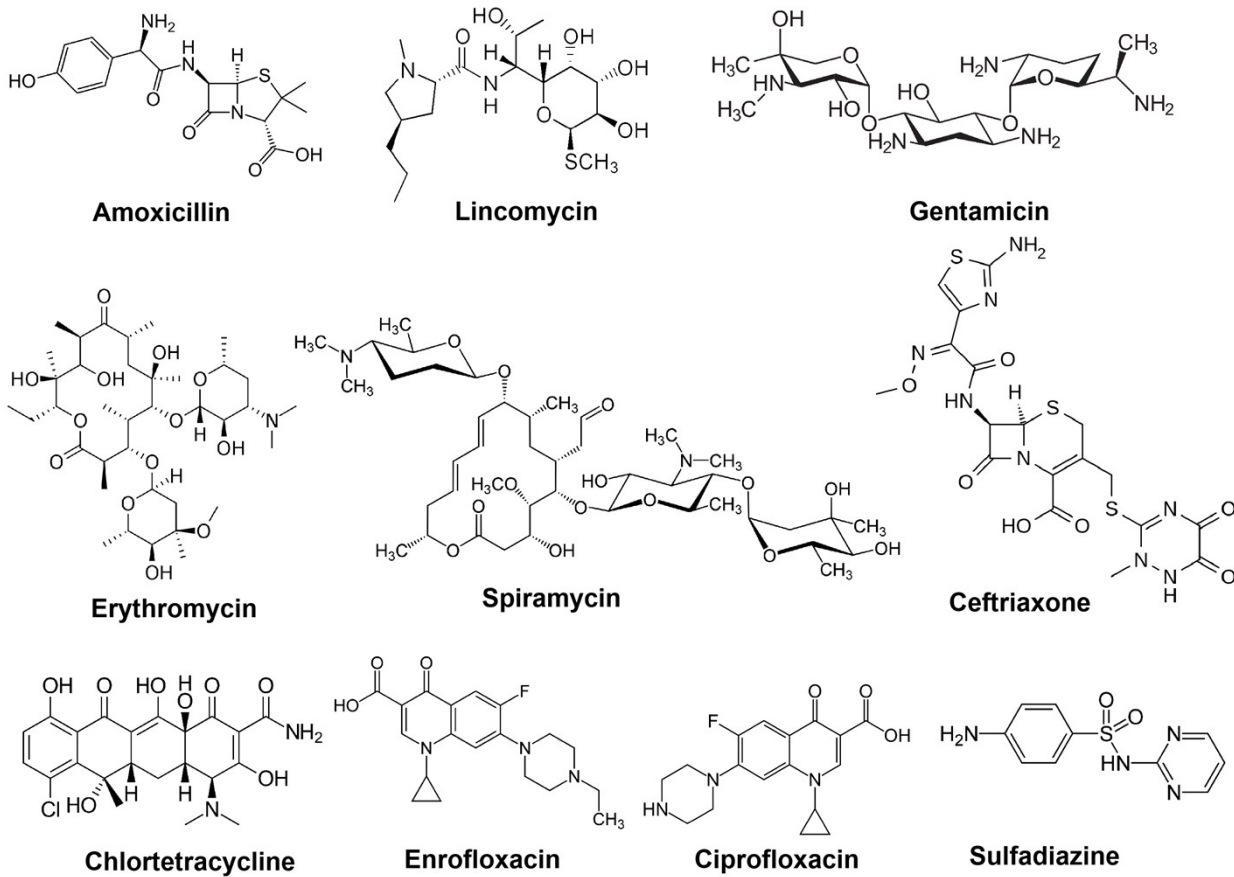


Fig. S1. Structures of 10 common antibiotics (amoxicillin, lincomycin, gentamicin, erythromycin, spiramycin, ceftriaxone, chlortetracycline, enrofloxacin, ciprofloxacin, and sulfadiazine).

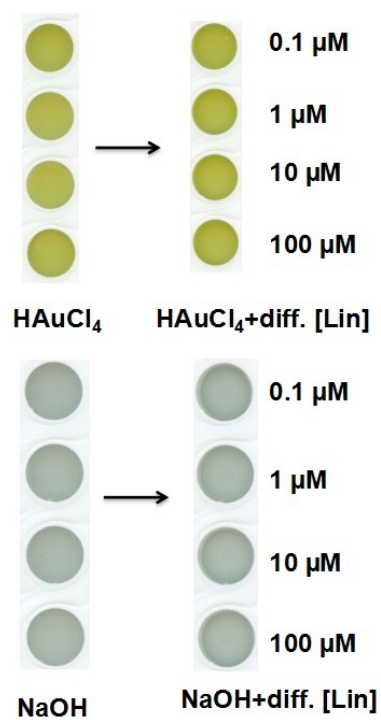


Fig. S2. Color images of the HAuCl₄ and NaOH solution exposure to different concentrations of Lin, respectively.

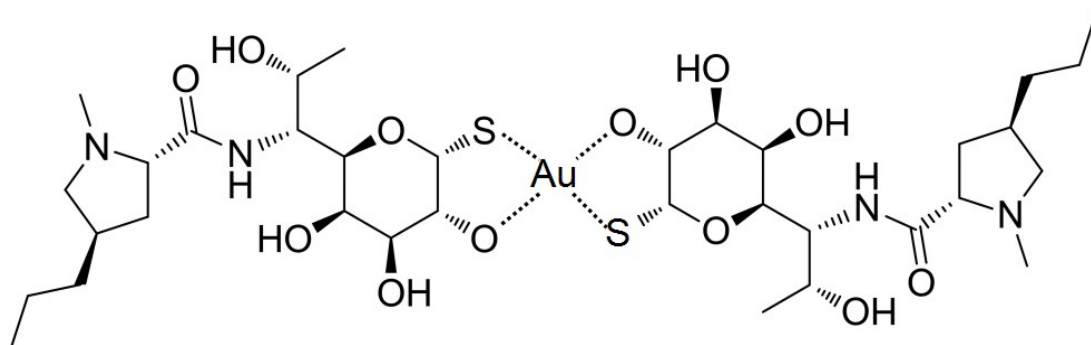


Fig. S3. Schematic representation of the sensing procedure for colorimetric detection of Lin based on chelation interaction between Au and Lin.

Supplementary Table

Table S1. The equation and parameters for limit of detection (LOD) calculation.

Y = A + S × X						
Parameter	A	S	R	SD	N	P
Lin in double distilled water	55.65	3.88	0.998	1.26	6	<0.0001
Lin in real sample	6.99	11.07	0.997	3.46	5	<0.0001

A = Y-intercept, S = slope, R = correlation, SD = standard deviation, N = number of data points, P = probability value.

The limit of detection (LOD) could be obtained by the above equation and parameters.

$$\text{LOD}_{\text{water}} = 3 \times \text{SD} / \text{S} = 3 \times 1.26 / 3.88 \mu\text{M} = 0.97 \mu\text{M}$$

$$\text{LOD}_{\text{sample}} = 3 \times \text{SD} / \text{S} = 3 \times 3.46 / 11.07 \mu\text{M} = 0.94 \mu\text{M}$$