

## Supplementary Information for

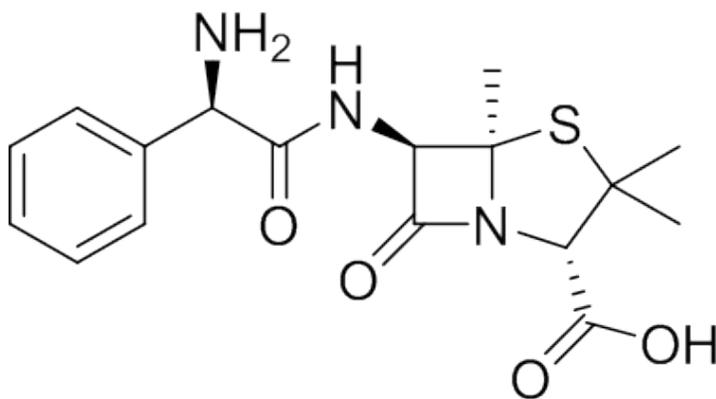
### High Throughput LSPR and SERS Analysis of Aminoglycoside Antibiotics

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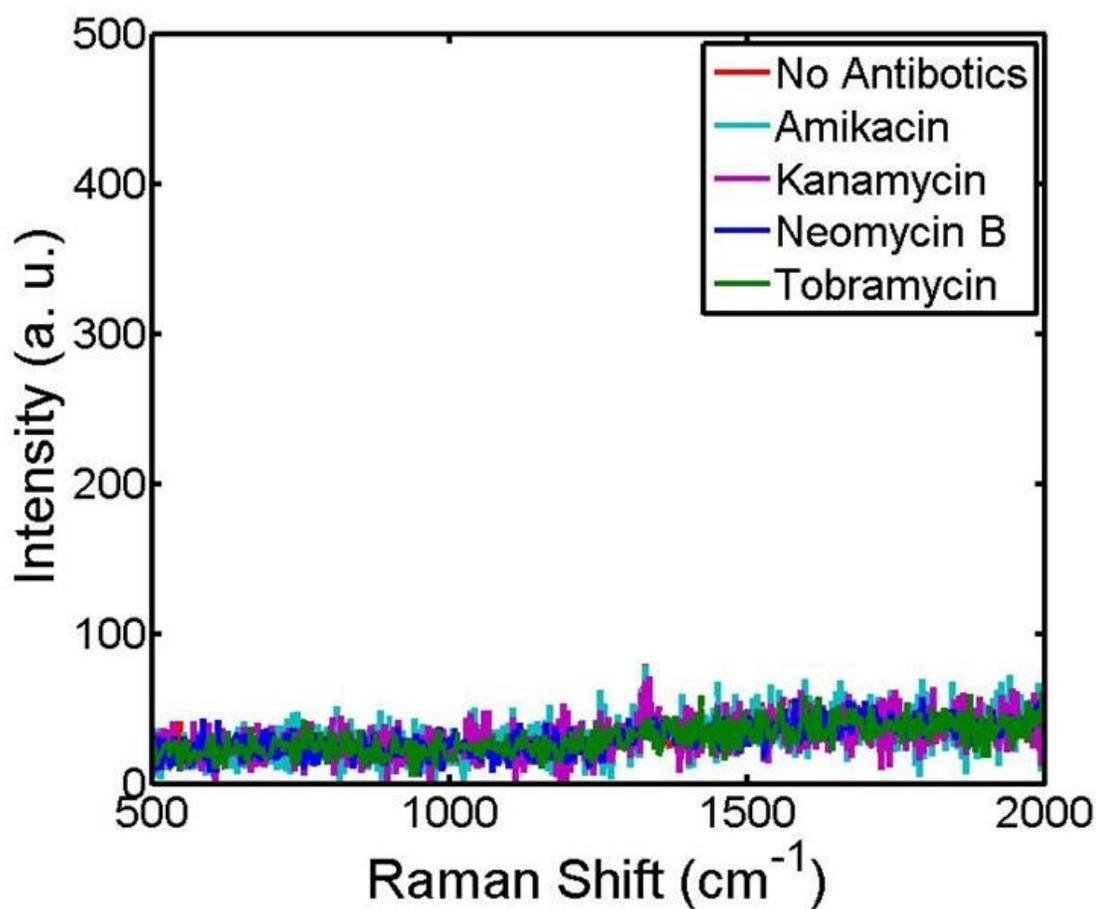
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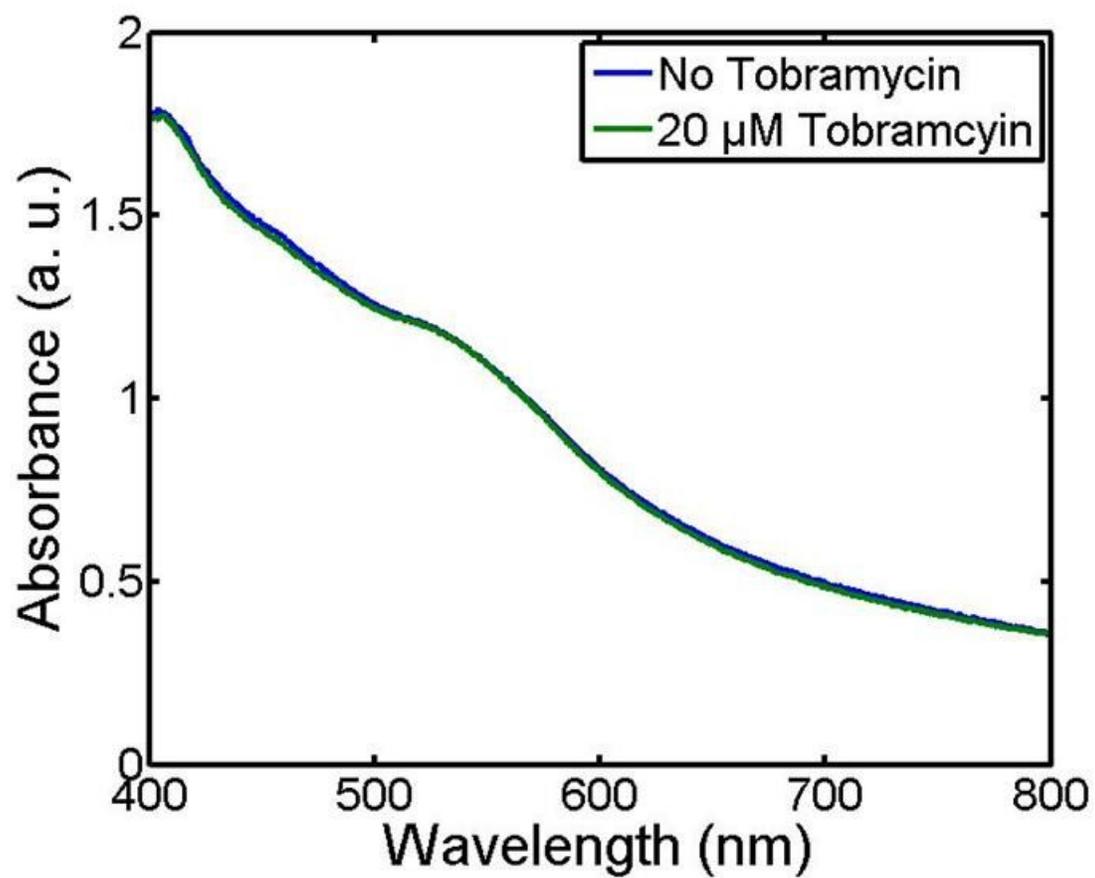
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**Figure S1:** Structure of ampicillin



**Figure S2:** SERS spectra of all aminoglycoside antibiotics at 1  $\mu\text{M}$  after the addition of 20 nm citrate-capped gold nanoparticles. Spectra are the average of 3 replicate wells and 5 scans of each well.



**Figure S3:** Extinction Spectra of DTNB nanoparticles in crude serum with and without the addition of 20  $\mu\text{M}$  Tobramycin

**Table S1:** LSPR and SERS results for tobramycin in diluted human serum.

[Tobramycin] ( $\mu\text{M}$ )	Expected $A_{700}/A_{550}$	Experimental $A_{700}/A_{550}$	Expected Intensity at $1337\text{ cm}^{-1}$	Experimental Intensity at $1337\text{ cm}^{-1}$
0	0.08	$0.058 \pm 0.004$	111	$20 \pm 21$
4	0.10	$0.129 \pm 0.002$	370	$(0.9 \pm 0.6) \times 10^3$
20	0.468	$0.16 \pm 0.05$	1409	$(1.2 \pm 0.2) \times 10^3$

**Notes:** Each concentration of tobramycin was prepared in crude human serum and diluted x1000. Samples were prepared in triplicate and analysed 3 times. The absorbance ratio was obtained for each LSPR analysis and the peak height at  $1337\text{ cm}^{-1}$  for SERS analysis. The average was taken to compare to the expected value from the equation of the LOD graph for tobramycin analysed by LSPR and SERS.