Electronic Supplementary Material (ESI) for Analyst.

SUPPLEMENTARY INFORMATION

Combining vancomycin-modified gold nanorod arrays and colloidal nanoparticles as the sandwich model for discrimination of gram-positive bacteria and their detection via surface-enhanced Raman spectroscopy (SERS)

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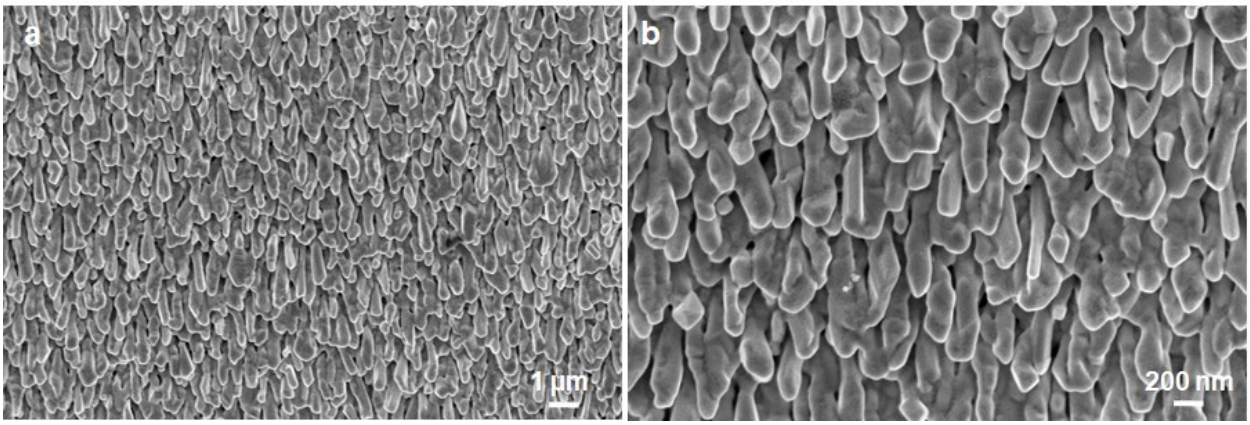

Figure S1. Representative SEM images of GNA platforms at different magnifications.

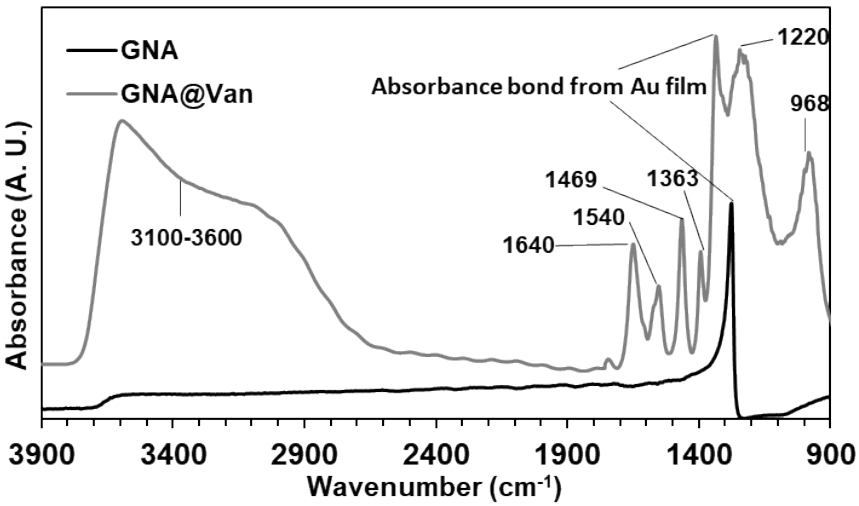

Figure S2. FT-IR spectra of GNA and GNA@Van substrates.

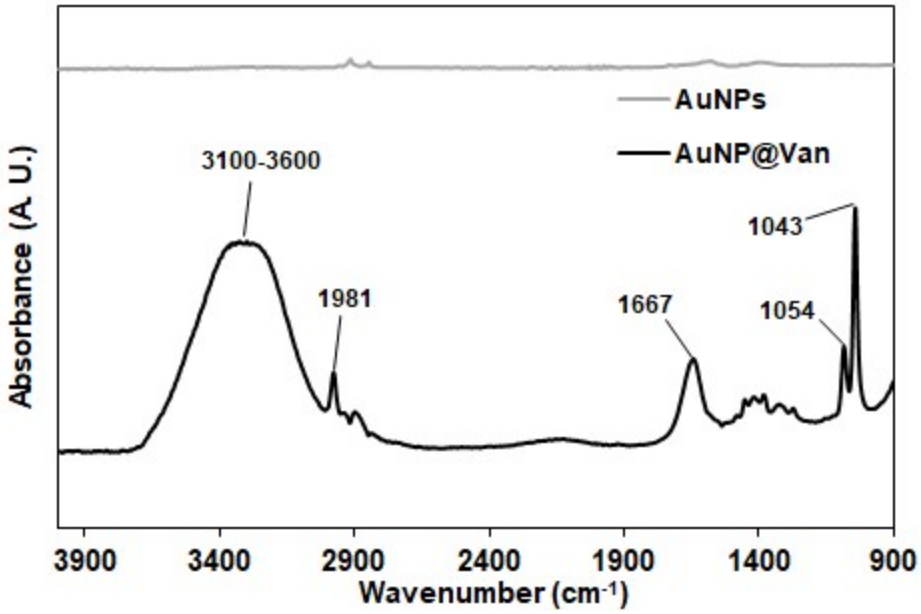

Figure S3. FTIR spectra of synthetized AuNPs and AuNP@Van.

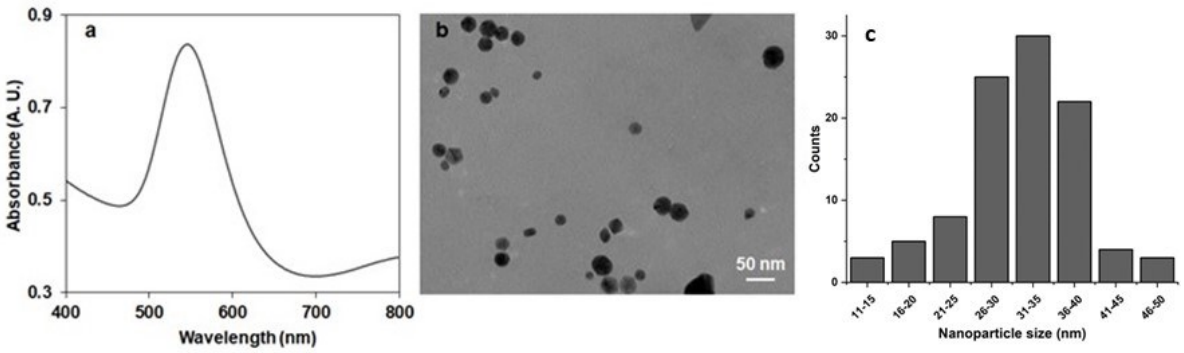

Figure S4 UV–vis absorption spectra (a), TEM image (b), and size histograms (c) of AuNP@Van NP systems.

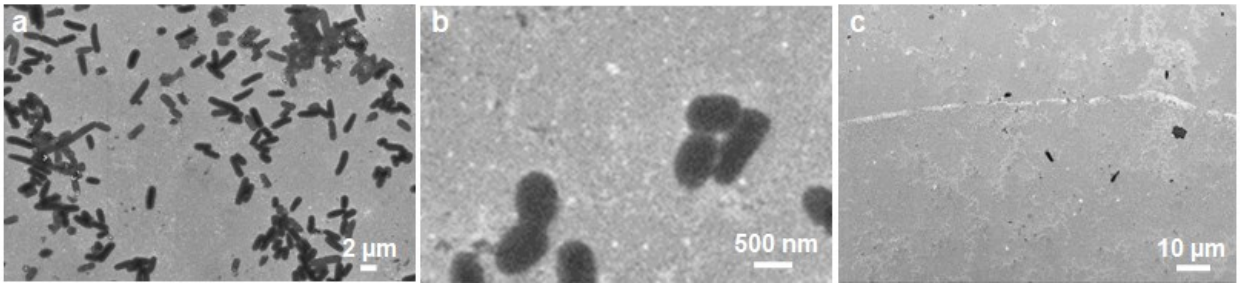

Figure S5. Representative SEM images of a) *B. Subtilis,* b) *S. aureus* and c) *E. coli* bacteria on SGS@Van substrate.

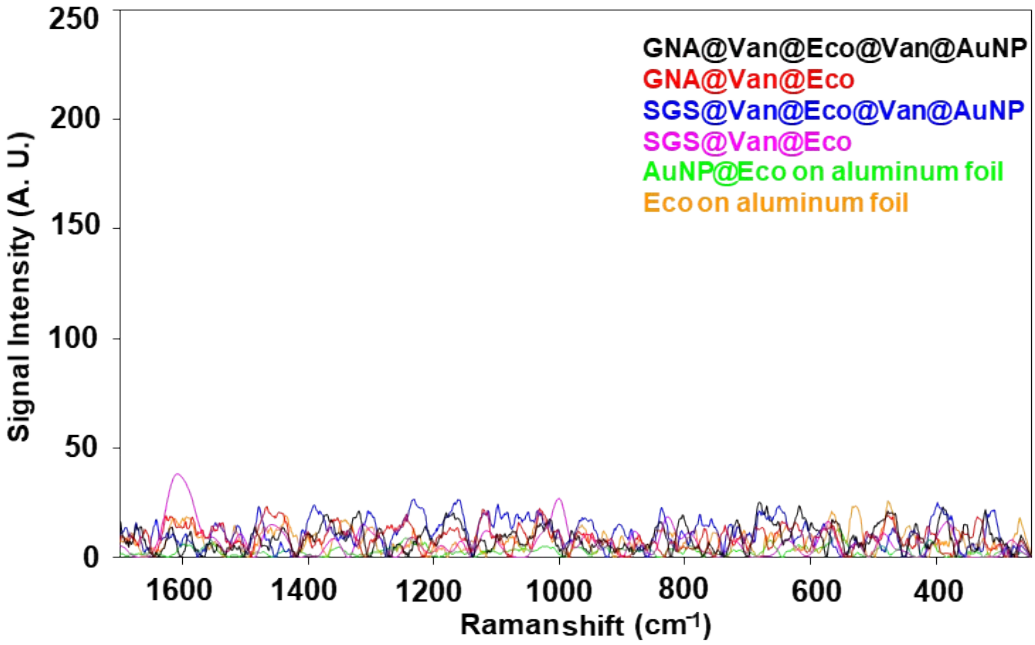

Figure S6. The averaged SERS spectra of *E. coli*, collected from the bacteria and AuNP@Bct on aluminium foil and the SGS@Van@Bct, SGS@Van@Bct@Van@AuNP, GNA@Van@Bct and GNA@Van@Bct@Van@AuNP samples.

Table S1. Band assignments of GNA@Van and AuNP@Van substrates.

Wavenumber (cm^{-1})	Chemical bound	References
3400	hydroxyl stretching	[1]
2981	symmetry stretching of CH_2	[2]
1643	C=O stretching	[3]
1667	Amid I	[4]
1540	N-H bending	[5]
1504	C-H bending vibration from phenyl ring	[6]
1469-1480	$CH\text{-}CH_3$ asymmetric scissoring	[7]
1363	$CH\text{-}CH_3$	[8]
1220-1230	C-O	[9]
968	C-O stretching	[10]

Table S2. Bacterial capturing abilities of GNA@Van substrates.

Bacteria	Count/1000 μm²
B. subtilis	76±5
S. aureus	59±7
E. coli	2±1

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