

Supplementary Material to the article “Photoelectric nature of nanocomposite ZnO/CuO antibacterial activity”

Table S1. Parameters of Raman spectral bands of *S. aureus* strain before and after light exposure. Each cell contains up to three rows corresponding to the spectral position of the peak, its width, and the area under the curve.

Spectral bands' assignment	Wavenumber, cm ⁻¹ Width, cm ⁻¹ Area, arb. units	
	S. aureus	S. aureus + light
Phe	1011.35±0	1008.93±0
	18.84±0.57	16.88±0.33
	1883.85±57.65	1899.43±31.86
Phe	1036.79±0	1036.79±0
	18.21±1.38	12.74±1.19
	706.24±49.32	358.10±30.29
-PO ₂ in nucleic acids, phospholipids	1070.59±0	1071.80±0
	12.81±4.18	14.17±6.94
	173.85±71.97	127.83±96.52
PO ₂ , C-C, C-O in nucleic acids, lipids	1091.05±0	1093.46±0
	25.35±2.76	34.24±4.58
	1340.14±175.24	1630.63±311.48
C-N, C-C stretch in nucleic acids	1106.67±0	1110.26±0
	17.62±2.76	35.30±5.05
	639.67±173.25	1724.87±348.46
O-P-O stretch in nucleic acids	1121.05±0	–
	25.70±3.77	
	1583.83±331.84	
Lipids, C-N, C-C phospholipids	1135.42±0	1131.83±0
	12.84±1.38	15.00±1.08
	628.83±116.84	946.09±111.16
Amino acids	1164.54±0	1160.34±0
C-C C, G	1181.94±0	1178.37±0
	6.04±2.33	14.54±1.59
	69.25±23.68	393.69±43.16
PO ₂	1232.95±0	1229.40±0
	76.04±2.31	28.73±2.61
	8891.13±355.94	1835.19±247.23

Amide III β -sheets in proteins	1249.49 \pm 0	1243.58 significant reduction
Amide III	1293.87 \pm 0	–
CH ₂ Trp	1308.31 \pm 0 62.44 \pm 2.81 4610.59 \pm 283.58	1308.31 \pm 0 35.49 \pm 2.94 3111.24 \pm 488.81
A in nucleic acids	1333.02 \pm 0	
A, G in nucleic acids, C–H in proteins	1346.92 \pm 0 60.29 \pm 1.35 7960.13 \pm 229.30	1341.08 \pm 0 27.55 \pm 0.94 3205.68 \pm 186.67
C–H bend in proteins	1361.84 \pm 0	
NH ₂ stretch in nucleic acids	1364.13 \pm 0	1364
CH ₃ groups in N–acetylglucosamine (NAG) and N–acetylmuramic acid (NAM)	1388.60 \pm 0	1388.60
CH ₃ in proteins	1401.61 \pm 0 25.07 \pm 3.82 456.73 \pm 76.48	1399.29 \pm 0 24.24 \pm 4.12 632.40 \pm 180.69
CH ₃ groups in N–acetylglucosamine (NAG) and N–acetylmuramic acid (NAM)	1415.68 \pm 0	1416.76
Amide II	1435.23 \pm 0	–
CH ₂ in lipids, proteins	1454.80 \pm 0 73.10 \pm 0.81 14971.46 \pm 222.13	1452.50 \pm 0 49.05 \pm 1.11 9833.10 \pm 624.78
Amide II	1552.23 \pm 0 54.92 \pm 2.73 7988.87 \pm 715.87	1559.07 \pm 0 75.25 \pm 1.87 12196.29 \pm 547.30
C=C C–C in Phe Tyr	1580.68 \pm 0 24.94 \pm 2.10 1912.66 \pm 384.94	1586.36 \pm 0 20.46 \pm 0.46 1576.57 \pm 48.04

Amide I β -sheets in proteins	1621.48±0 37.79±14.54 652.47±653.76	1623.74±0 37.24±2.55 2175.58±226.22
Amide I β -sheets in proteins, C-C in lipids, C-O in proteins	1646.31±0	–
Amide I α -helices in proteins	1663.20±0	1663.20±0
Amide I β -sheets in proteins	1678.94±0 20.51±0.82 1593.39±131.03	1673.32±0 17.42±3.12 435.16±114.10
Amide I β -coil in proteins	1696.89±0 39.72±1.39 3886.93±246.16	1700.25±0 20.88±1.21 795.31±90.91
C=O in nucleic acids	1786.06±0	1781.62±0
CH ₂	2874.80±0 32.93±3.44 7166.56±1462.22	2875.77±0 35.42±0.98 14501.80±529.58
CH ₂	2900.94±0 79.48±15.59 11561.66±13388.74	2897.07±0 24.82±1.76 3521.51±499.76
CH ₃ and CH ₂	2937.58±0 36.81±1.84 21625.76±4382.80	2937.58±0 28.30±0.76 14516.87±791.00
CH ₃	2982.65±0 33.80±3.99 7665.73±1299.06	2982.65±0 40.09±1.17 8888.87±692.35
CH ₃ and CH ₂	2998.89±0 9.41±3.84 358.21±230.45	–
CH ₃ and CH ₂	3015.10±0 9.49±2.96 381.17±145.90	3013.20±0 10.75±2.63 312.71±85.98