Supporting Information

Electrospun Polyvinylpyrrolidone-Based Dressings Containing GO/ZnO Nanocomposites: A Novel Frontier in Antibacterial Wound Care

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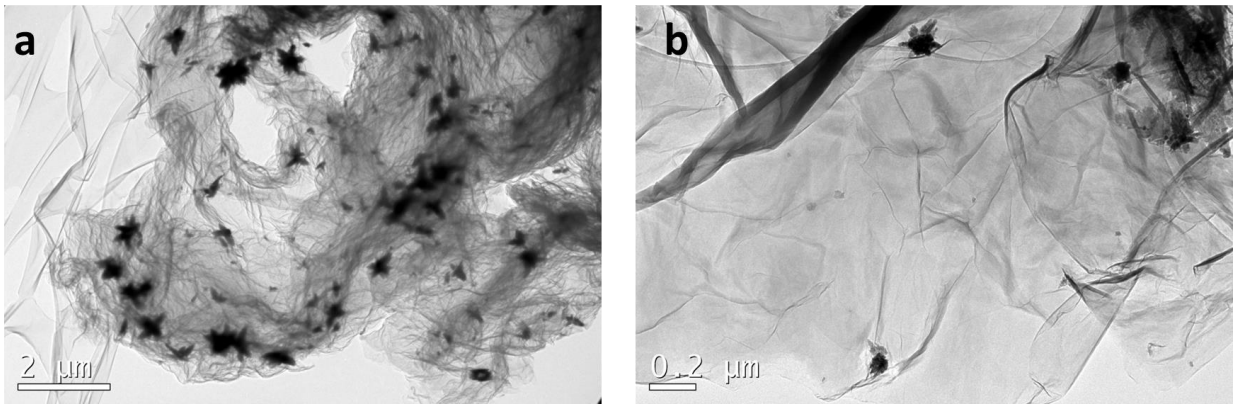

Figure S1. Representative TEM images of (a) GO/ZnO_1:1 and (b) GO/ZnO_2:1 nanocomposites.

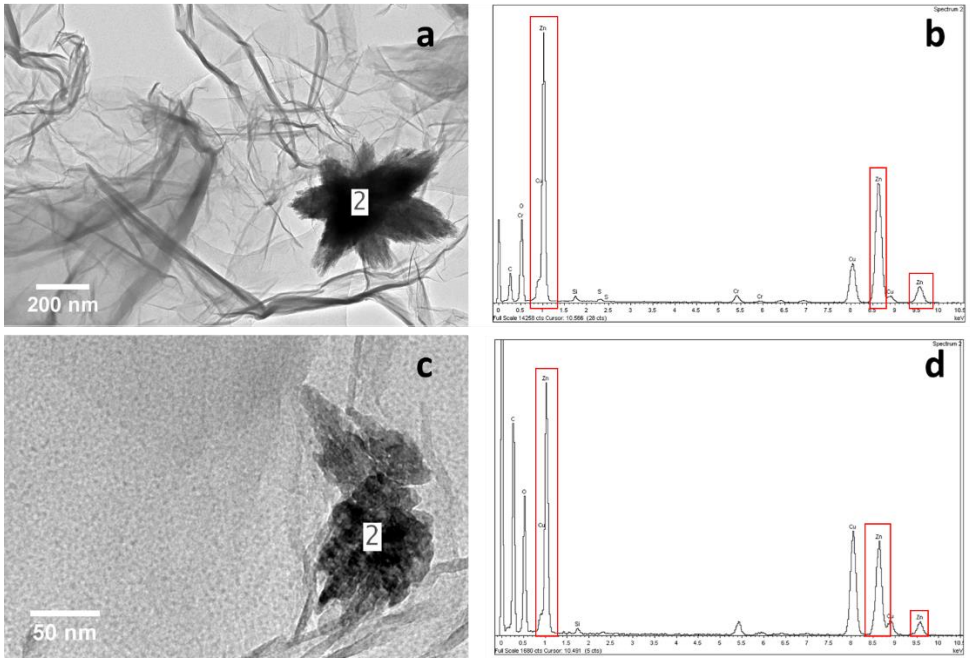

Figure S2. EDX analyses of ZnO nanoparticles on the (a,b) GO/ZnO_1:1 and (c,d) GO/ZnO_2:1 nanocomposites. Red squares indicate the peaks corresponding to Zn.

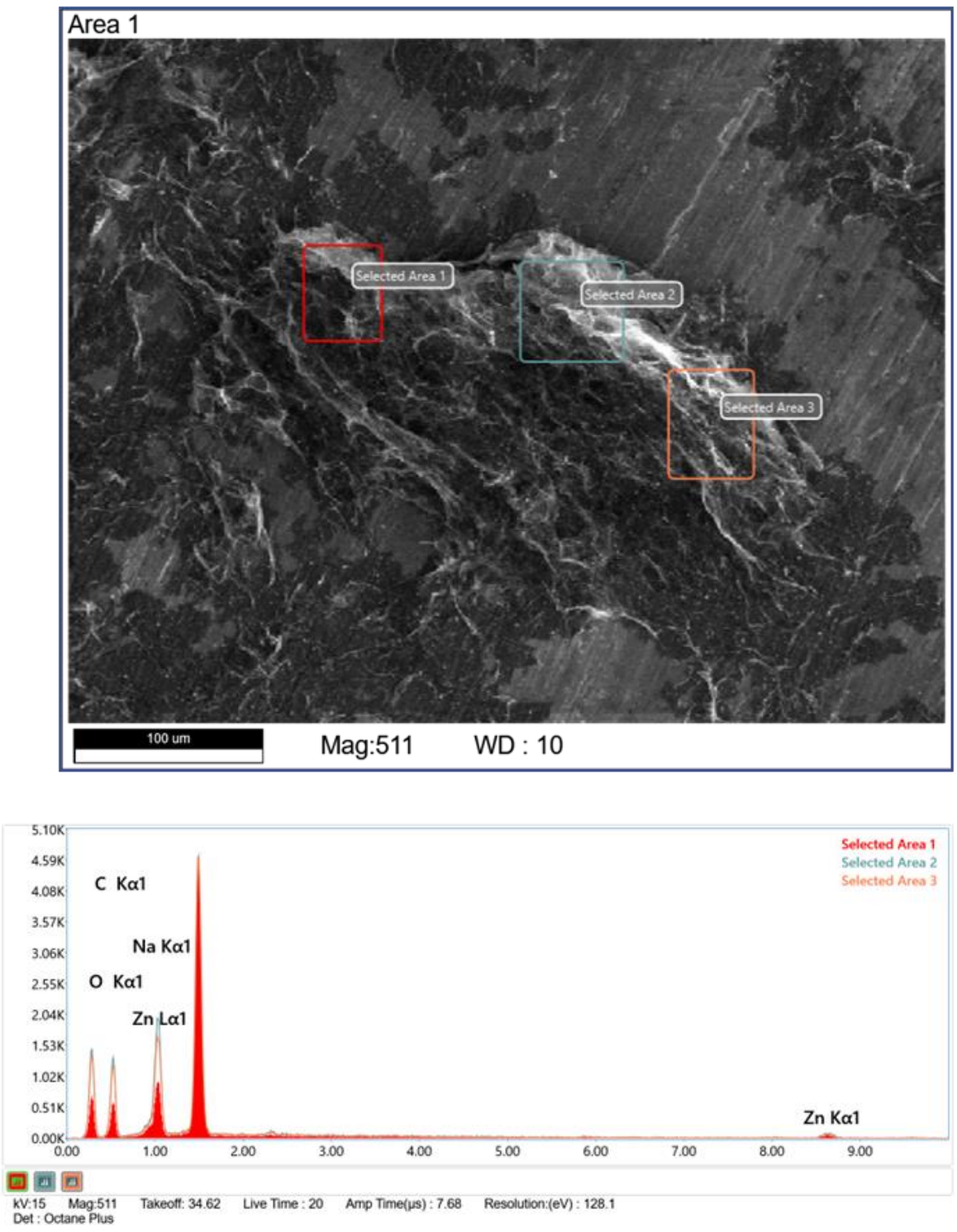

Figure S3. SEM pictures and element mapping results of GO/ZnO_1:1 composite.

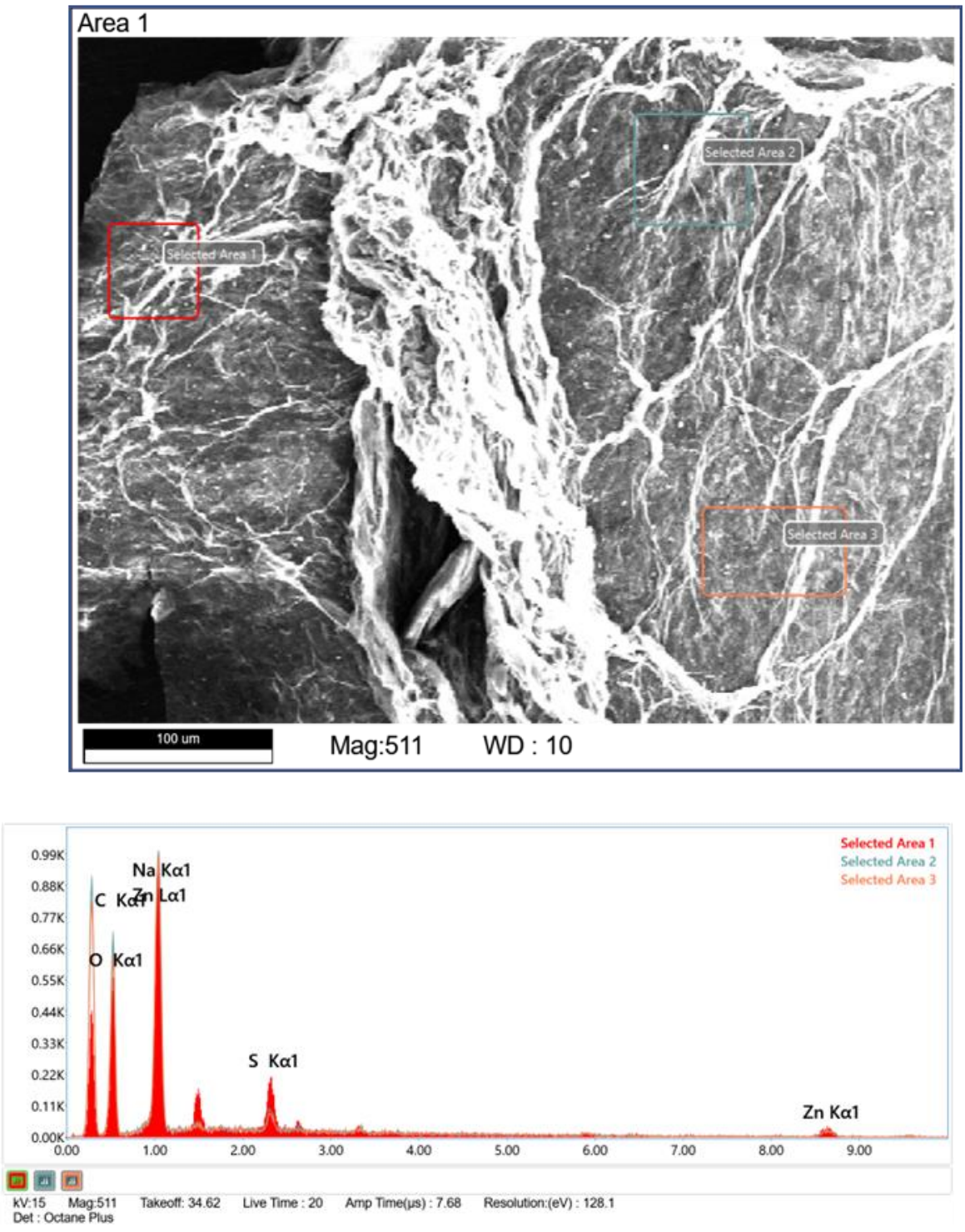

Figure S4. SEM pictures and element mapping results of GO/ZnO_2:1 composite.

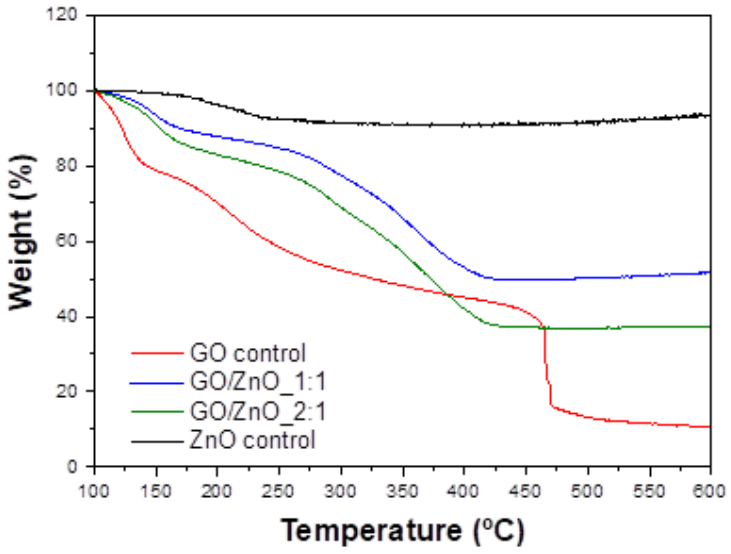

Figure S5. TGA analyses for GO, ZnO, GO/ZnO_1:1 and GO/ZnO_2:1 samples, performed under air atmosphere.

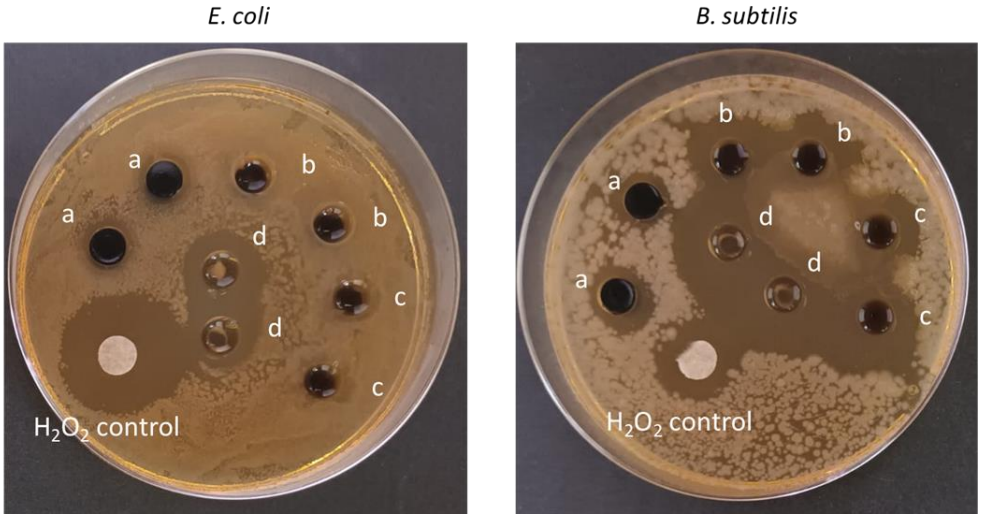

Figure S6. Antibacterial activity of GO ("a", 10.0 mg/mL), GO/ZnO_1:1 ("b", 0.1 mg/mL), GO/ZnO_2:1 ("c", 0.1 mg/mL) and ZnO ("d", 1.2 mg/mL) by the well diffusion assay against

Gram-negative (i.e., *E. coli,* left) and Gram-positive (i.e., *B. subtilis*, right) bacteria. Filter paper moistened with H_2O_2 was used as a positive control.

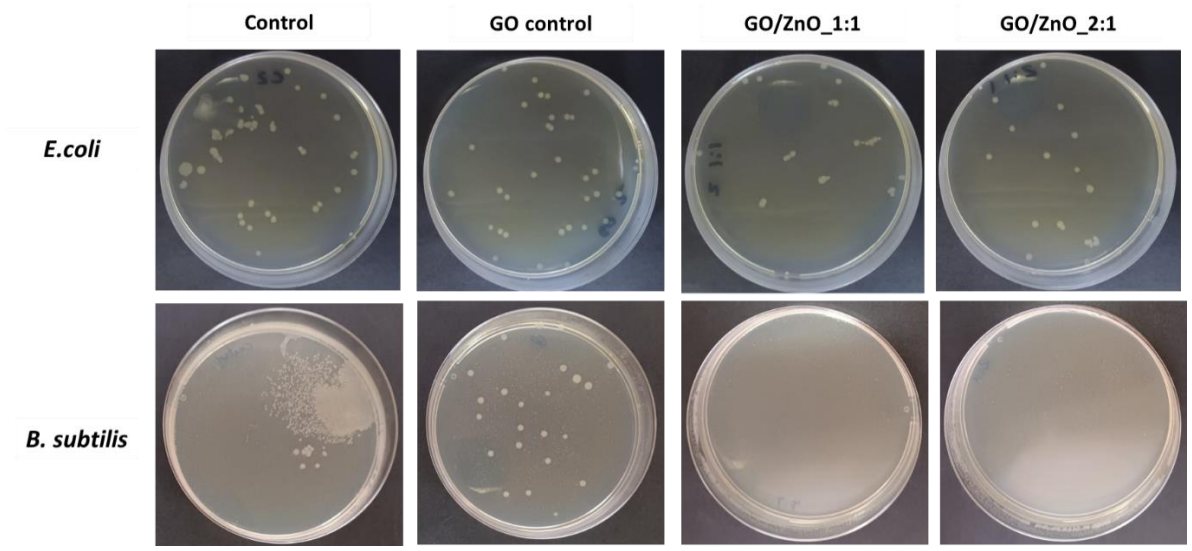

Figure S7. Representative digital images of the *E. coli* (upper panel) and *B. subtilis* (lower panel) culture plates after incubation in the presence of the different nanomaterials' dispersions (final concentration of 0.1 mg/mL). The control sample refers to incubation of both strains in the absence of any nanomaterial.

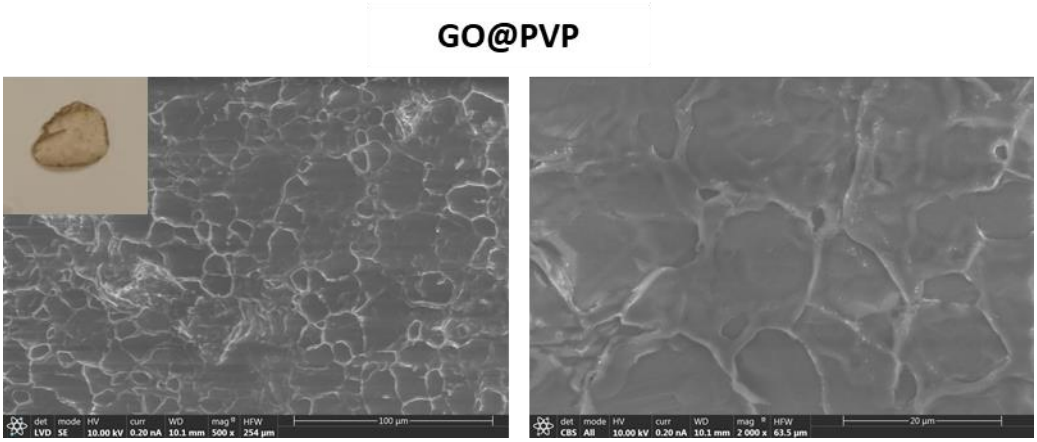

Figure S8. Representative SEM images of the GO@PVP control electrospun dressing at different magnifications. Scale bars: (left) 100 μm, (right) 20 μm. The inset image shows a digital photo of the dressing sample cut in round shapes with a diameter of 8 mm.

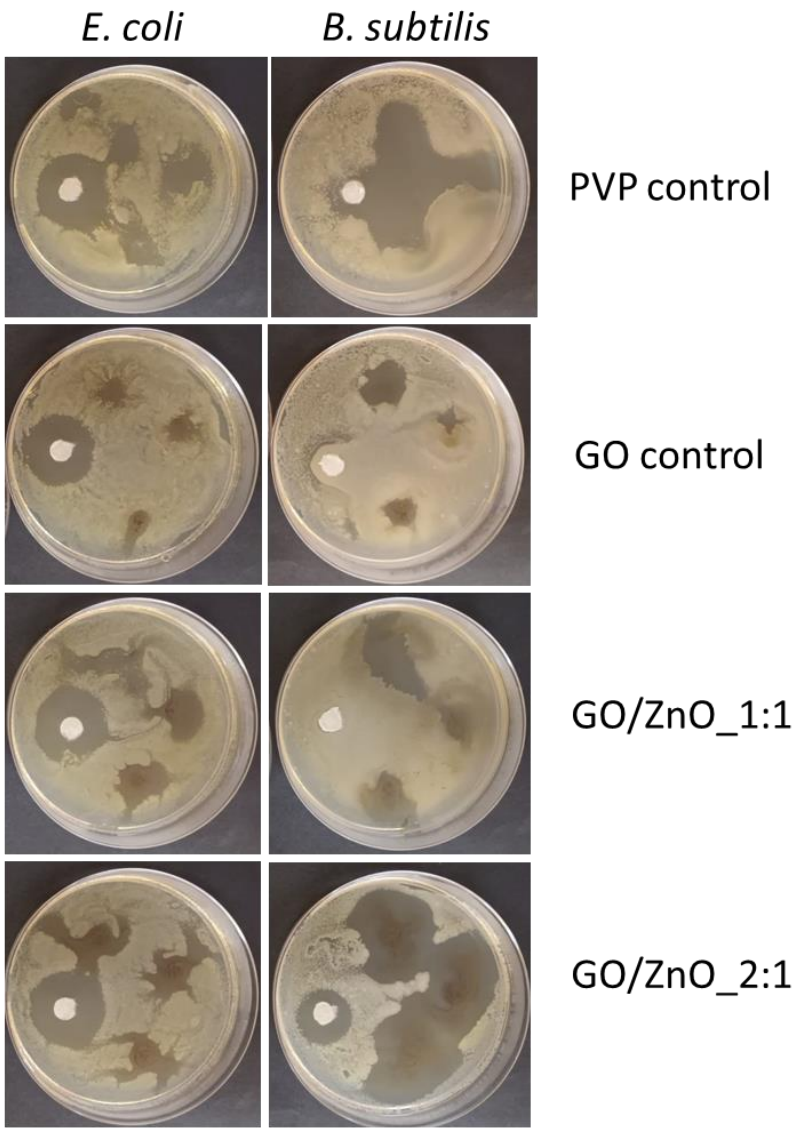

Figure S9. Digital images of *E. coli* (left panel) and *B. subtilis* (right panel) agar plates showing the three inhibition zones for each electrospun dressing sample after incubation at 37 ^{o}C. A positive control of H_2O_2 solution (1M) poured onto a round filter paper was added to each plate.