

Supplementary Information

Effects of pre-treatment using plasma on the antibacterial activity of mushroom surfaces

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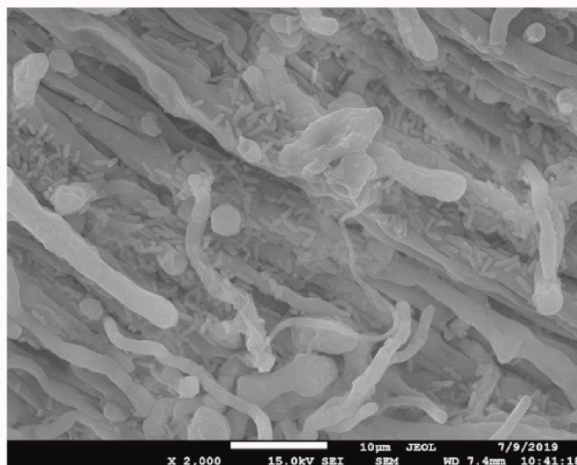
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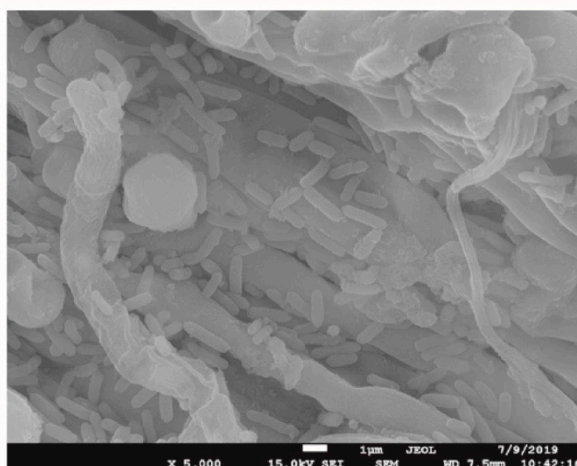
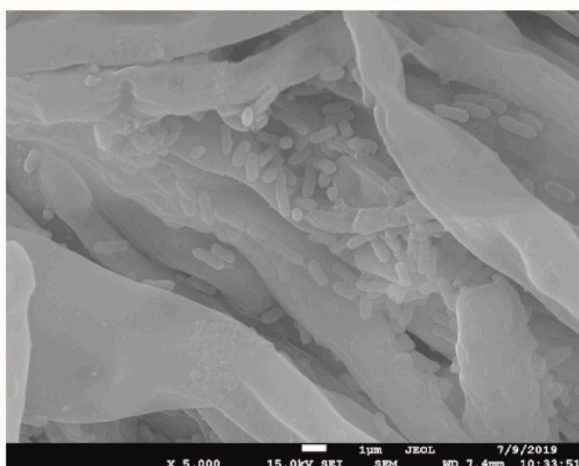
(a)

No treatment

x 2,000



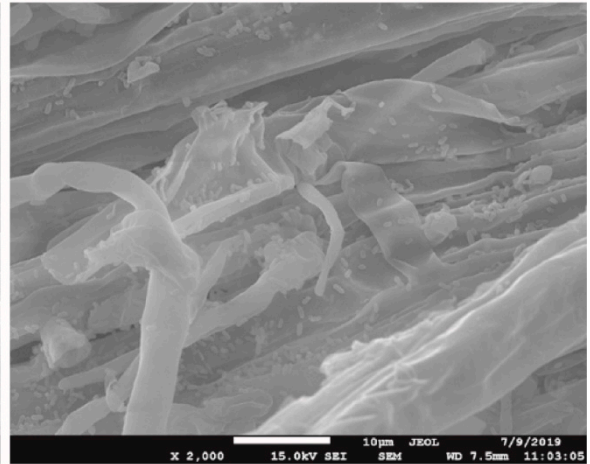
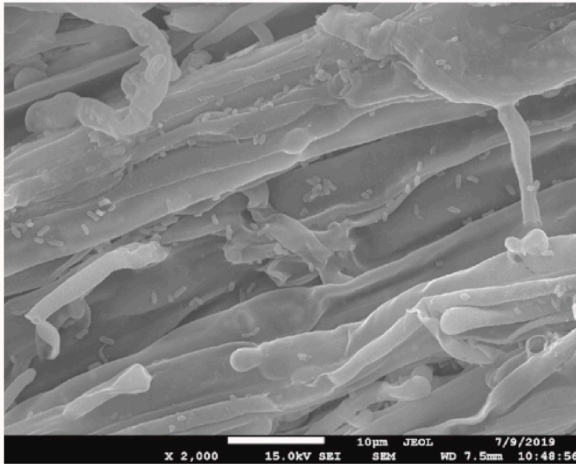
x 5,000



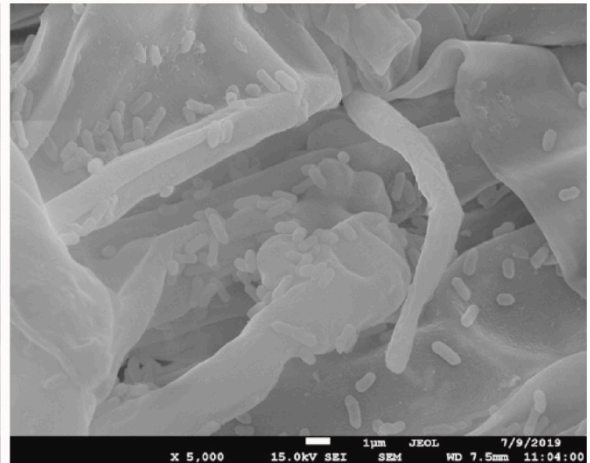
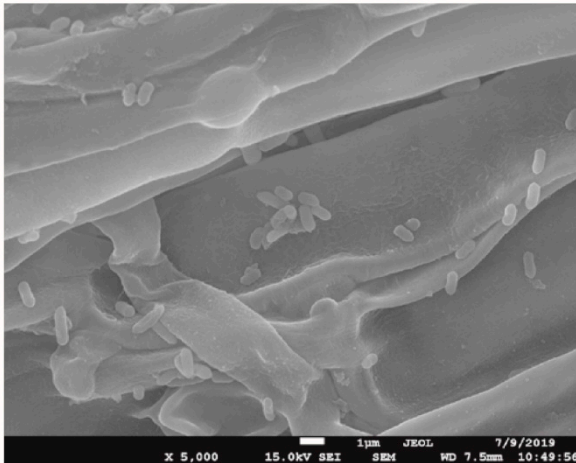
(b)

NTAPPJ (Non-thermal Atmospheric Pressure Plasma Jet)

x 2,000



x 5,000



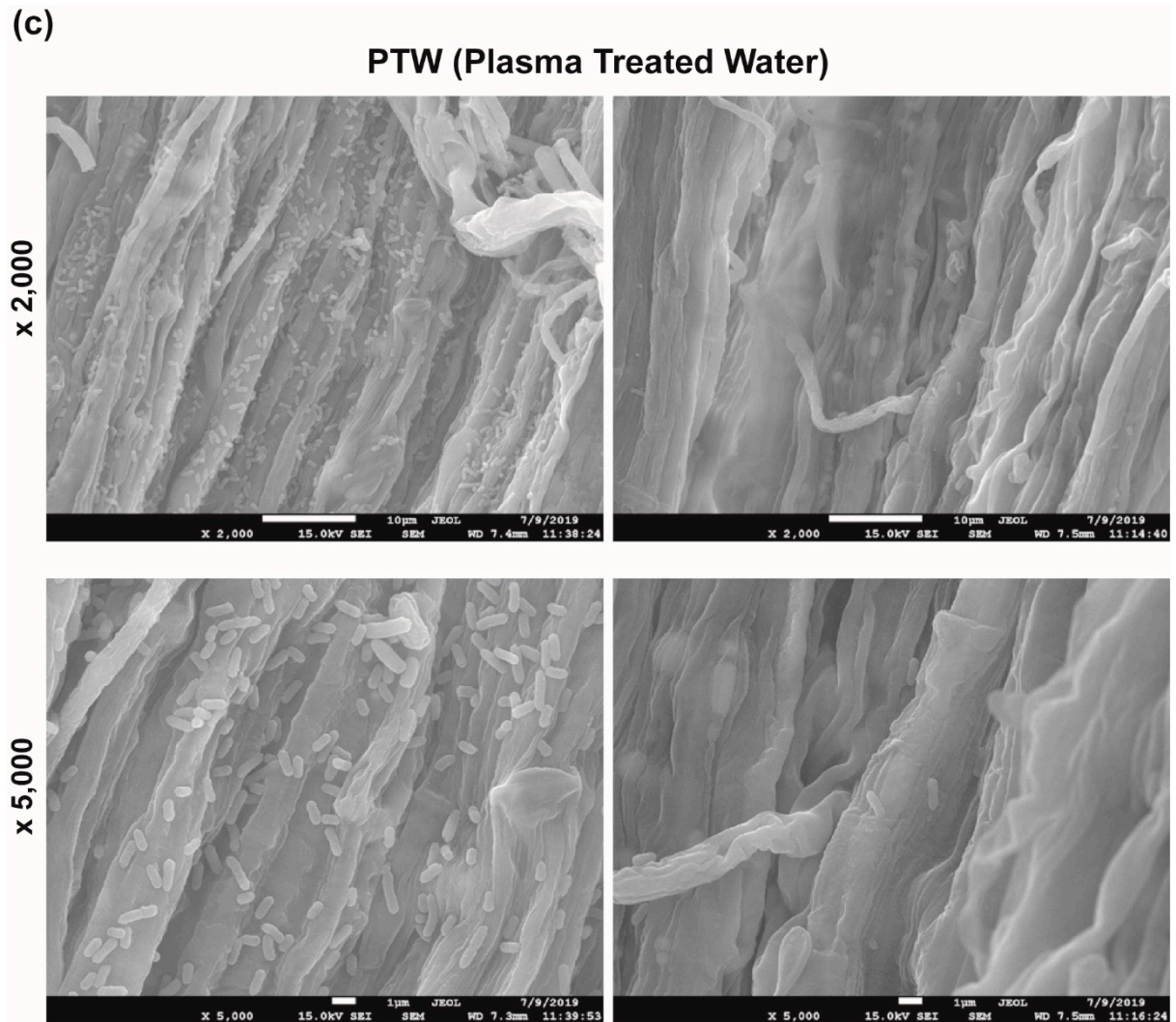


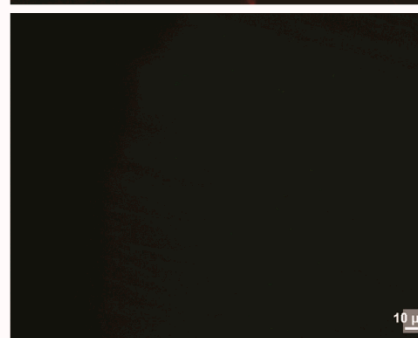
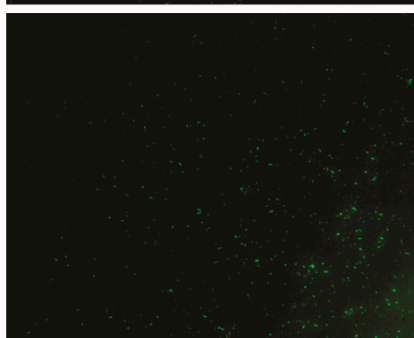
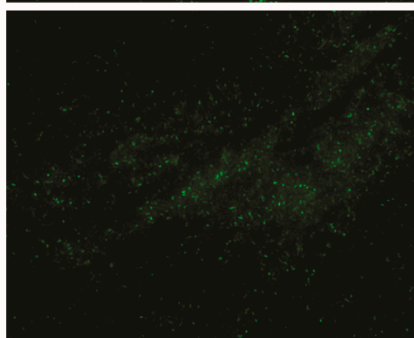
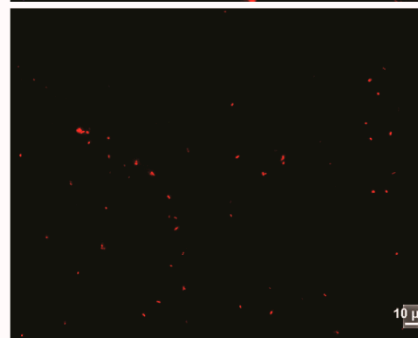
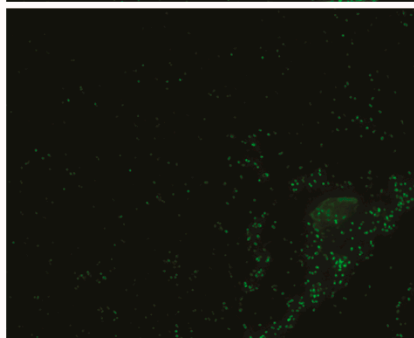
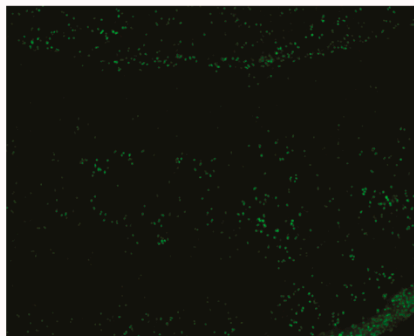
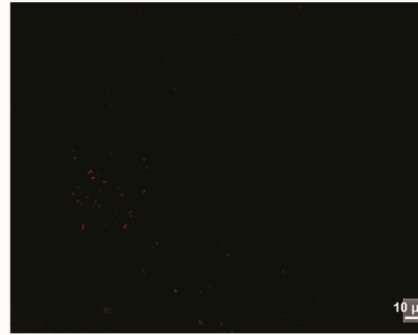
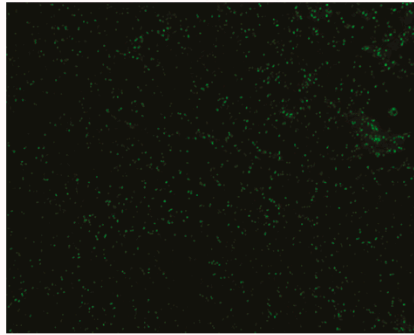
Figure S1. SEM analysis of a mushroom surface after bacteria were inoculated. Mushroom surfaces were treated with none (a), NTAPPJ (b), and PTW (c) for 15 min.

(a)

No treatment

Live (Syto-9)

Dead (PI)



— 10 μm

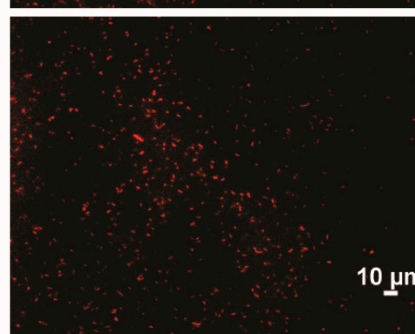
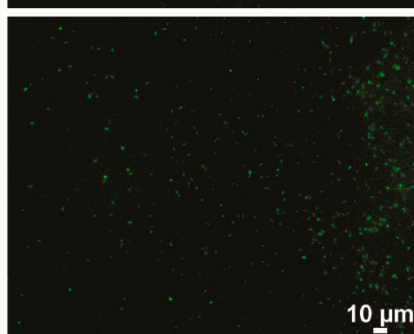
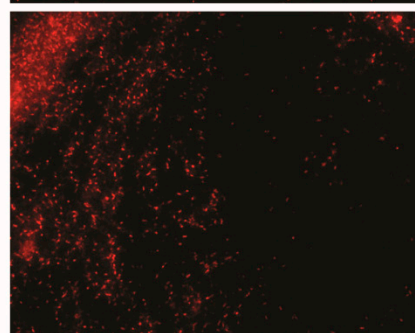
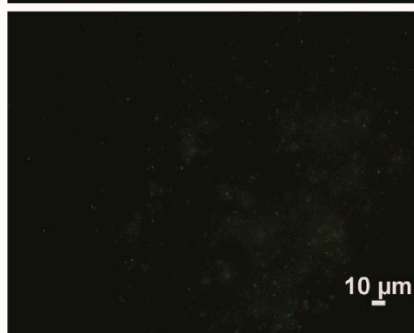
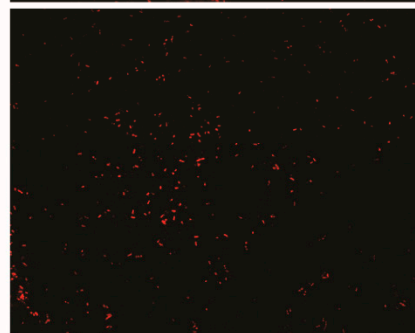
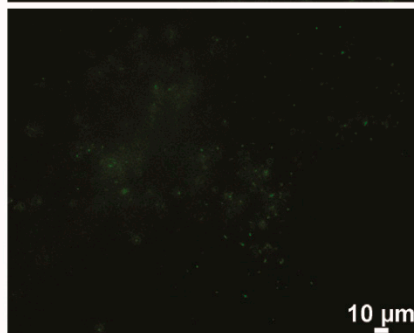
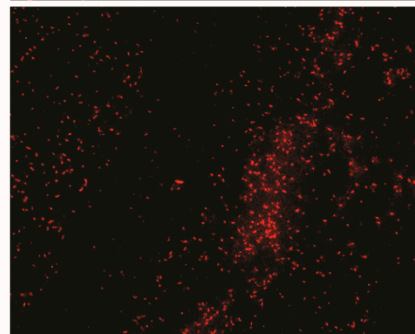
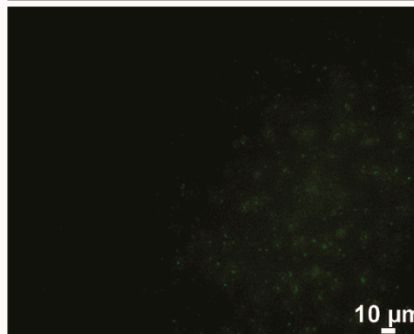
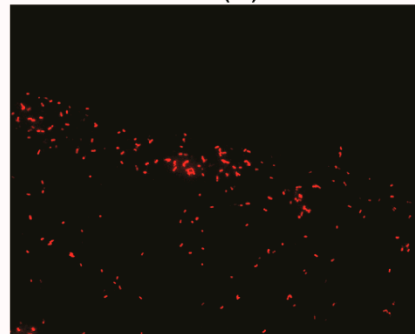
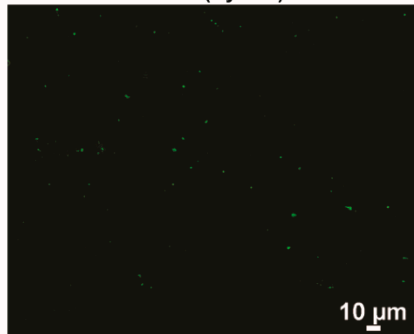
— 10 μm

(b)

NTAPPJ

Live (Syto-9)

Dead (PI)



— 10 μm

— 10 μm

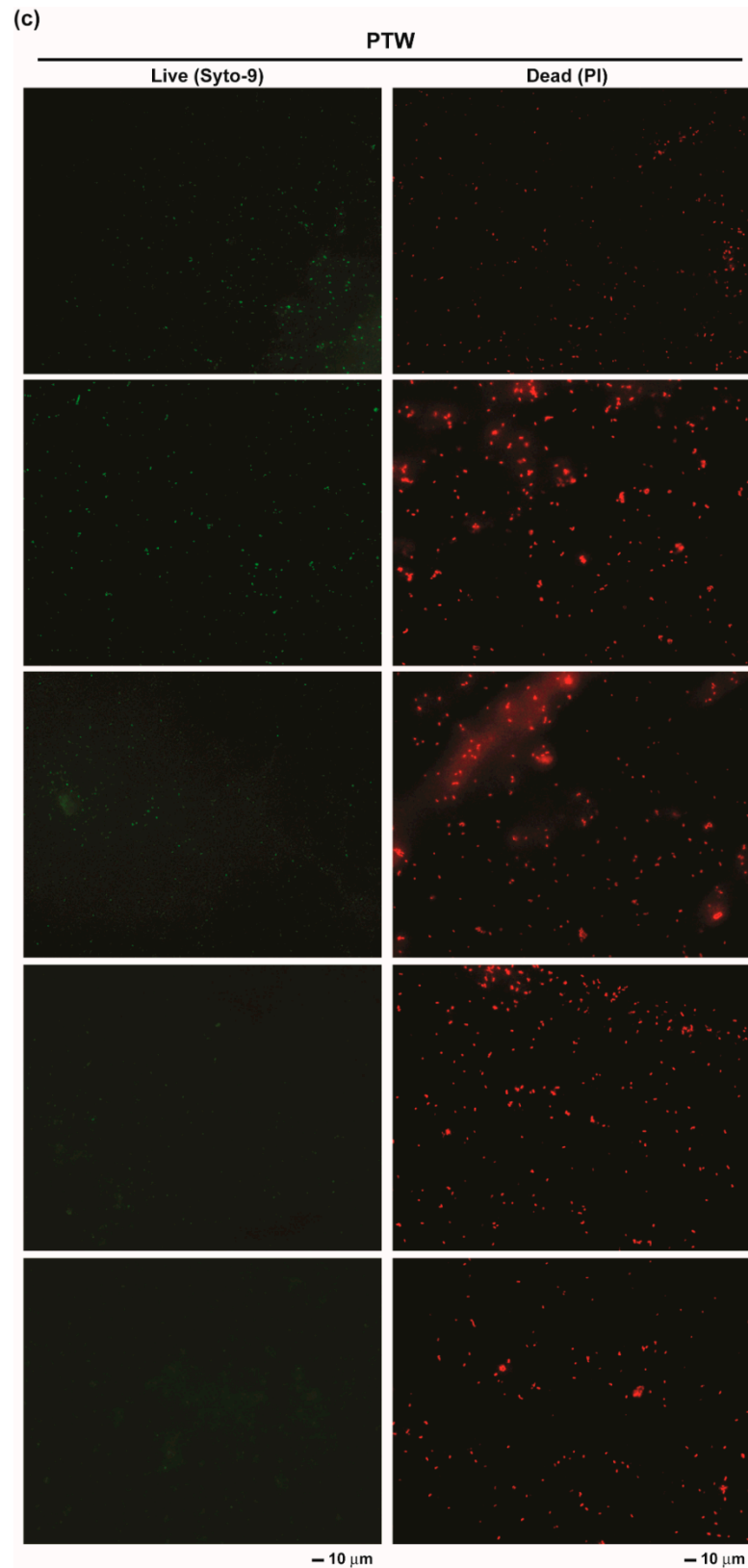
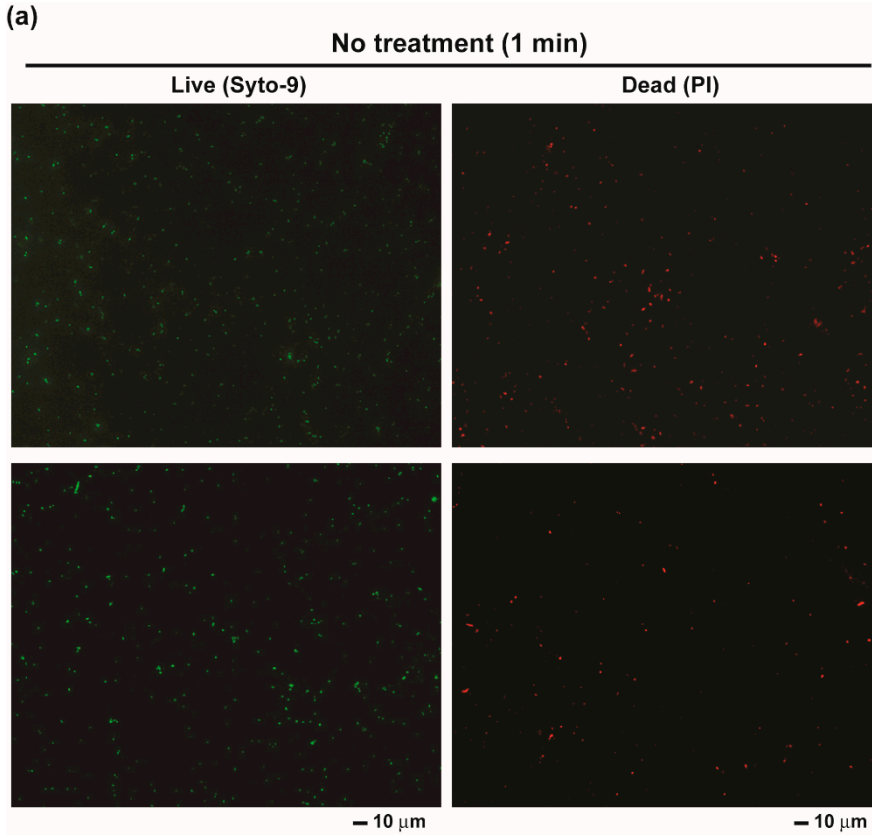
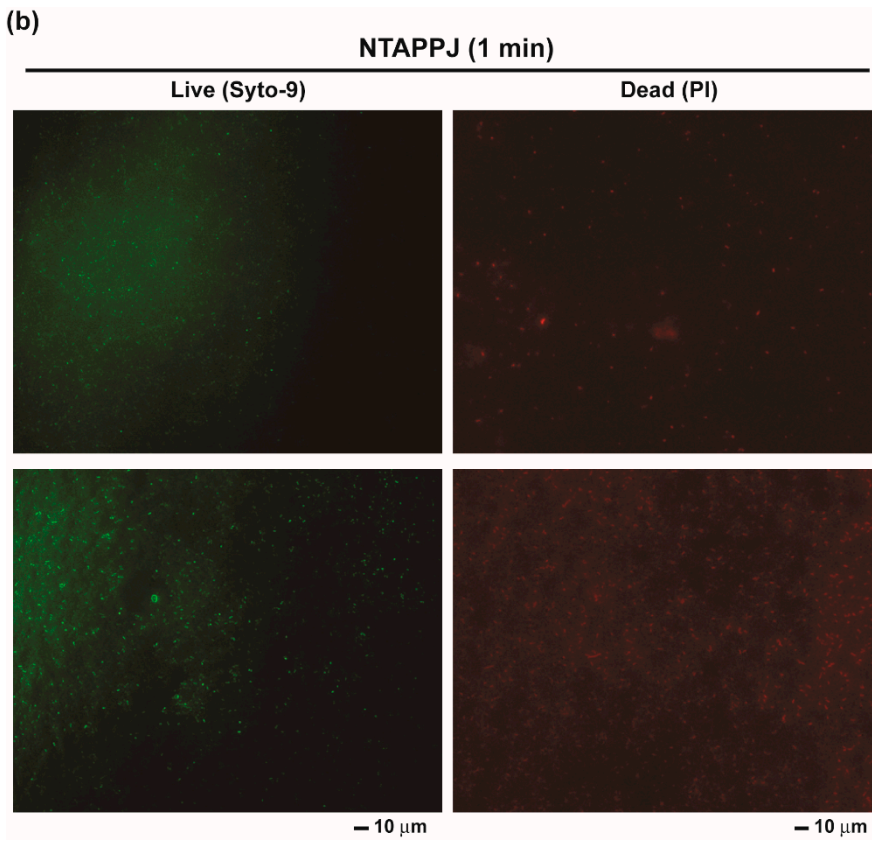


Figure S2. Live (green fluorescence) and dead (red fluorescence) bacteria on mushroom surfaces treated with none (a), NTAPPJ (b), and PTW (c). Mushroom surfaces were treated for 15 min and then inoculated with bacteria.

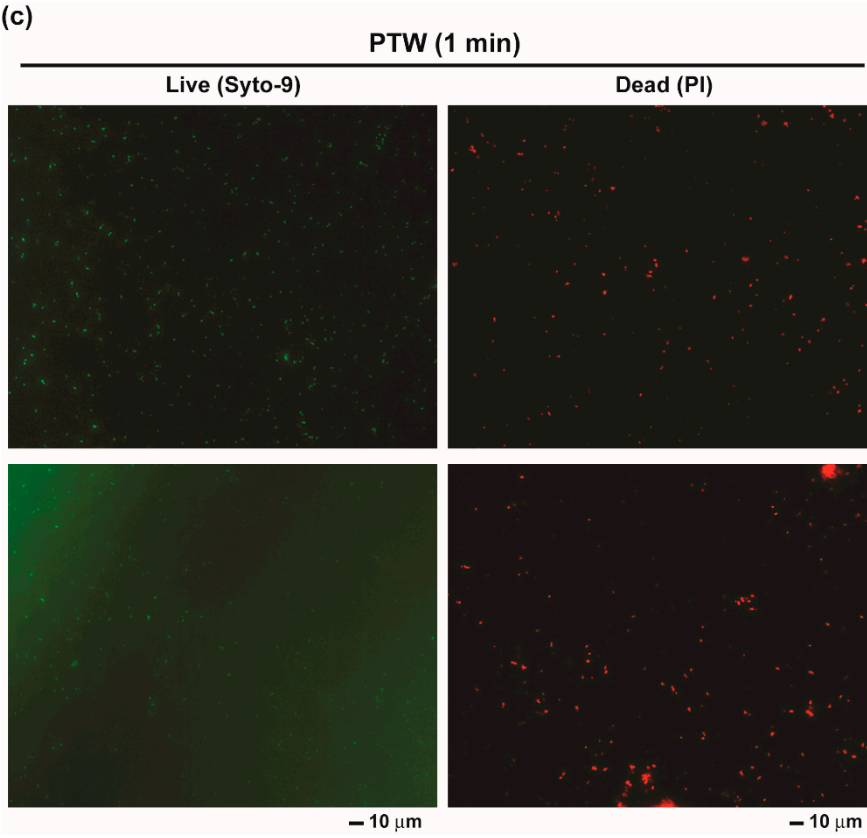
(a)



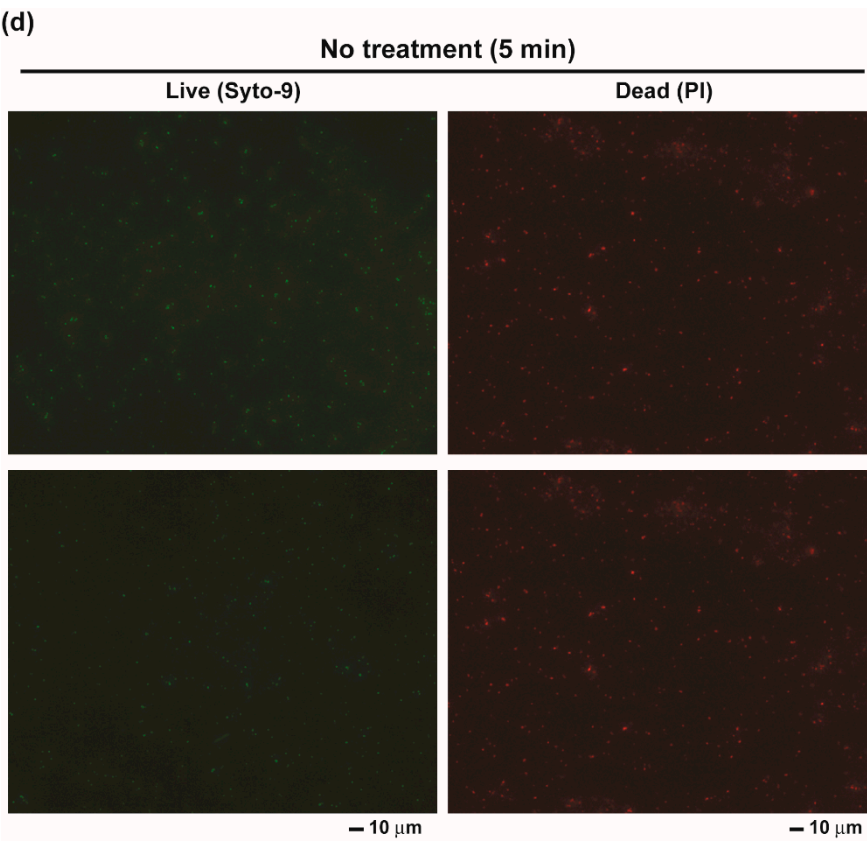
(b)



(c)



(d)



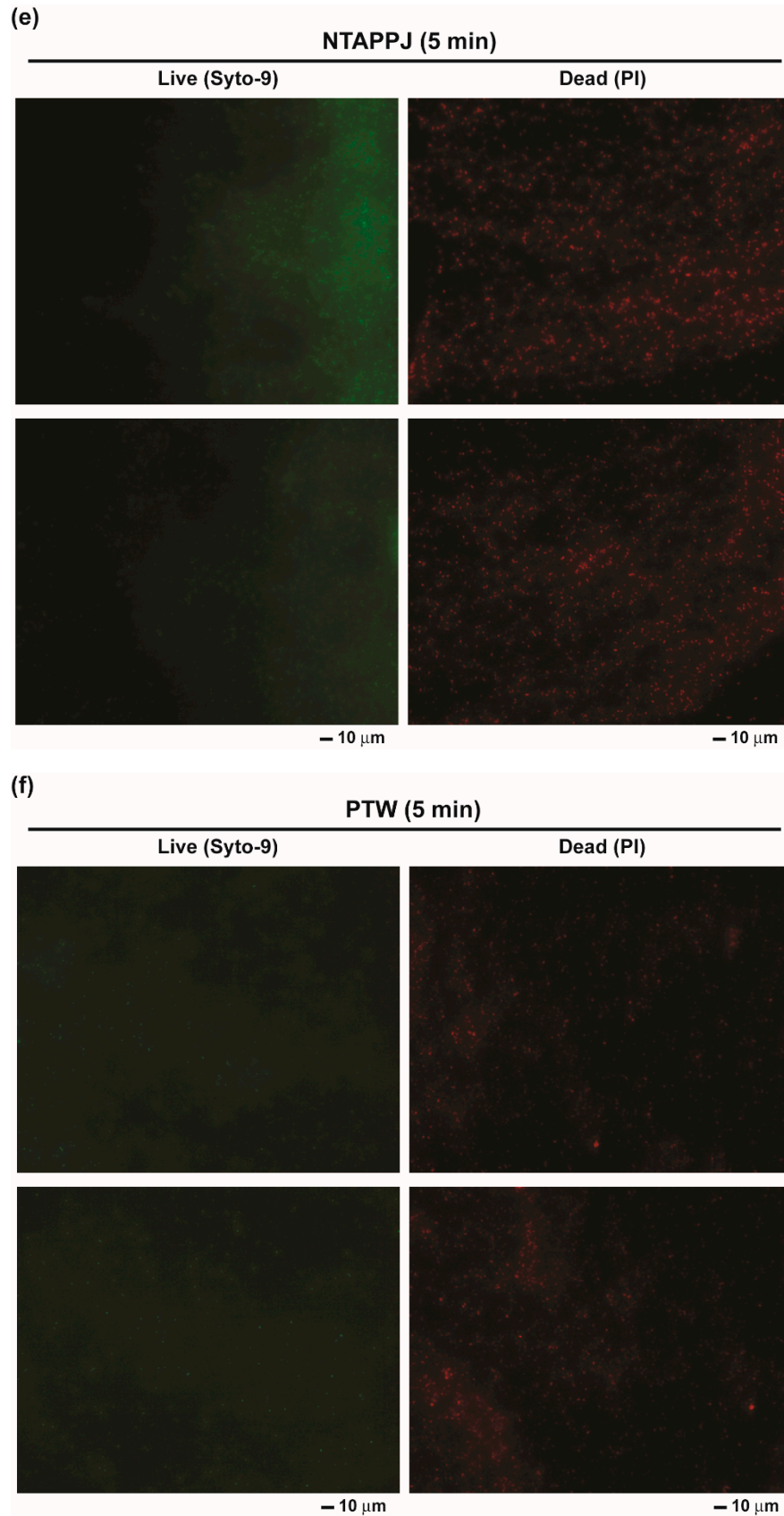
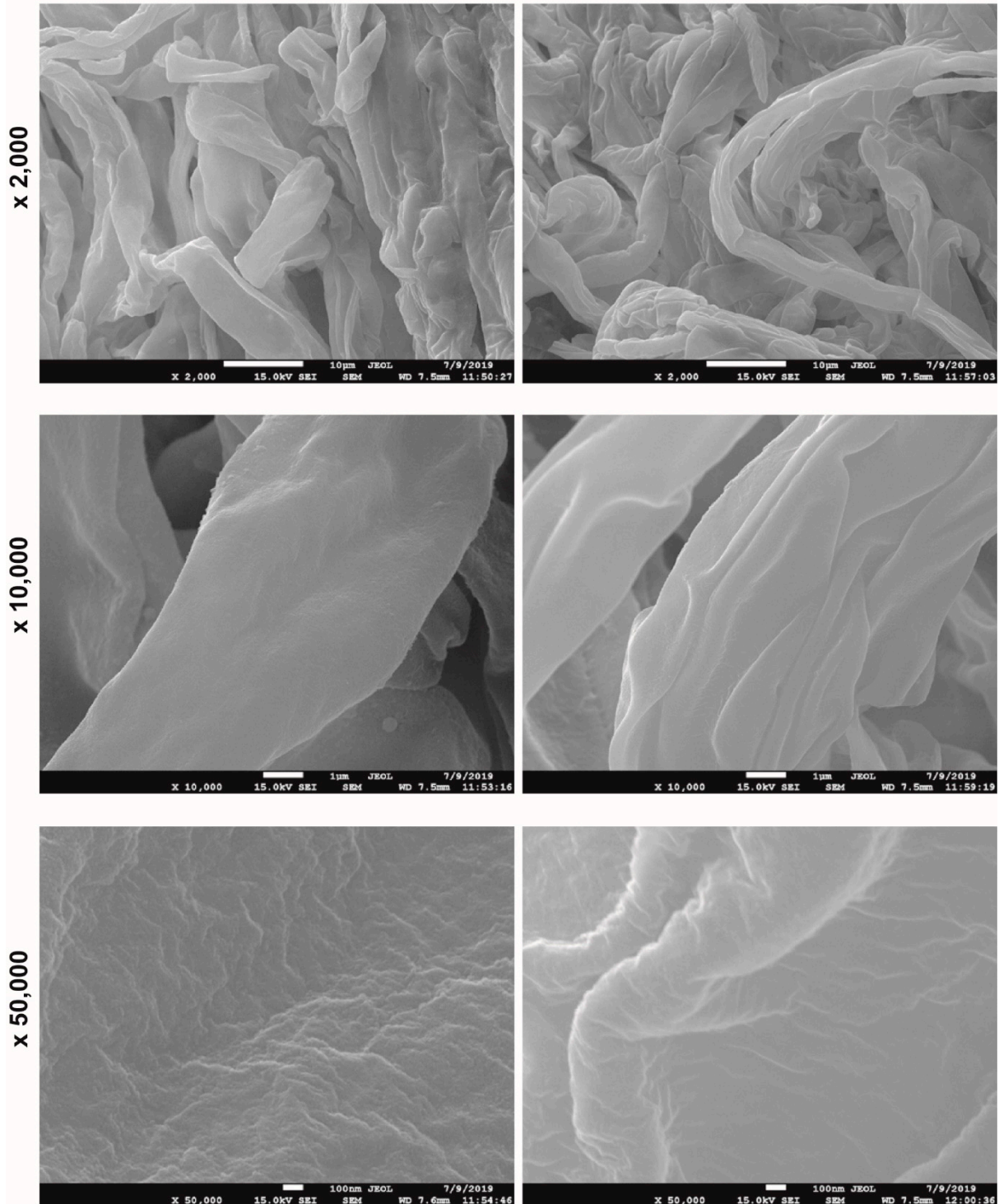


Figure S3. Live and dead bacteria on mushroom surfaces treated with none (a,d), NTAPPJ (b,e) and PTW (c,f) after incubation for 1 min (a–c) and 5 min (d–f). Mushroom surface was

treated with NTAPPJ or PTW for 15 min and then inoculated with bacteria. After brief washing and drying to remove non-adherent bacteria, mushroom was incubated for 1 and 5 min.

(a)

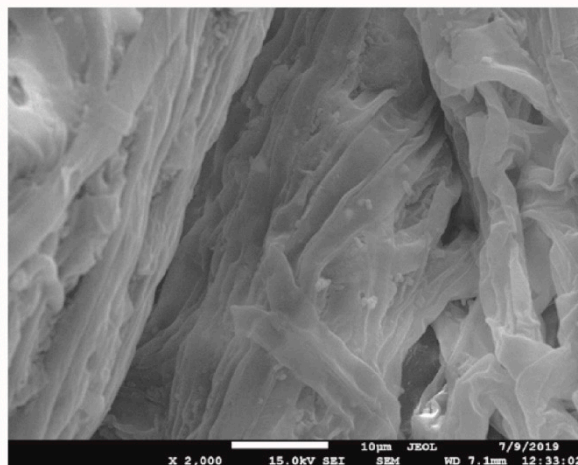
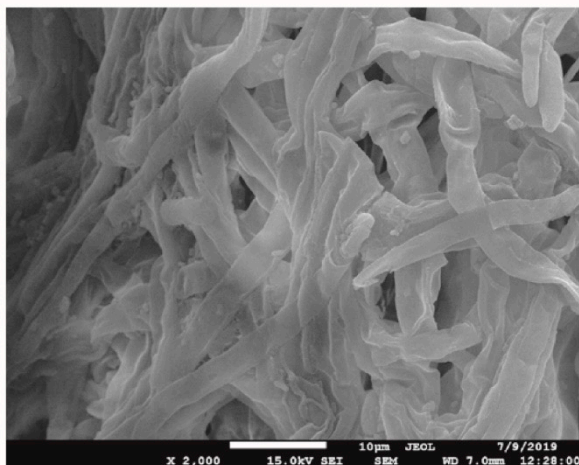
No treatment



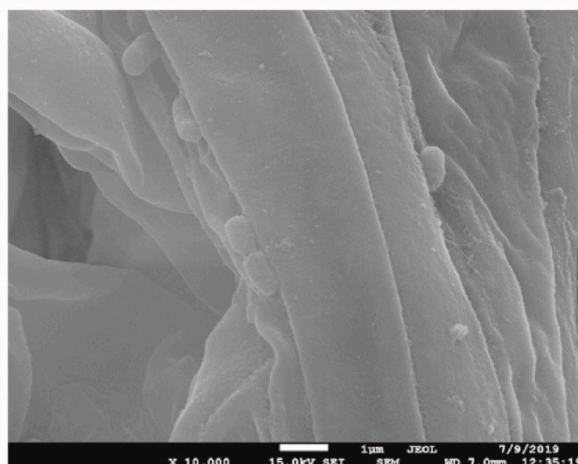
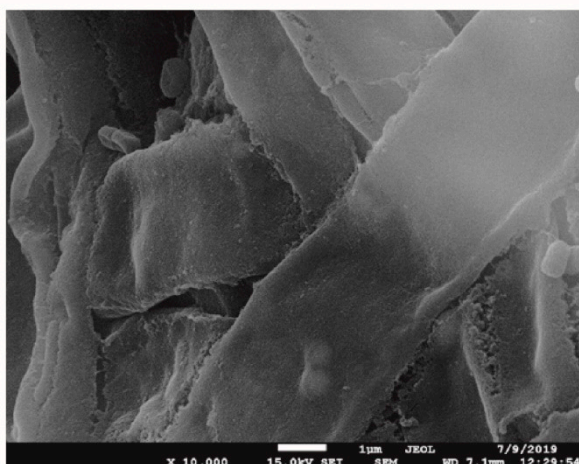
(b)

NTAPPJ (Non-thermal Atmospheric Pressure Plasma Jet)

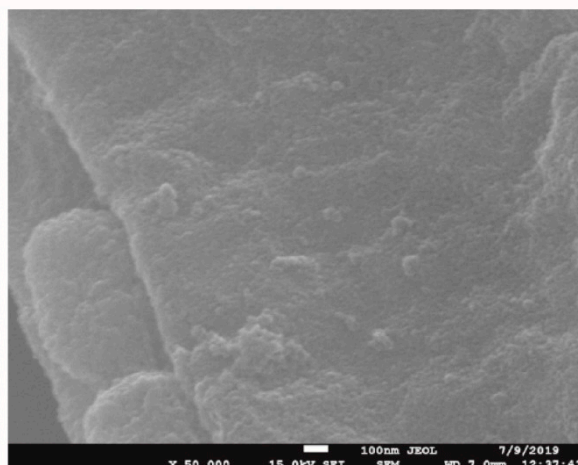
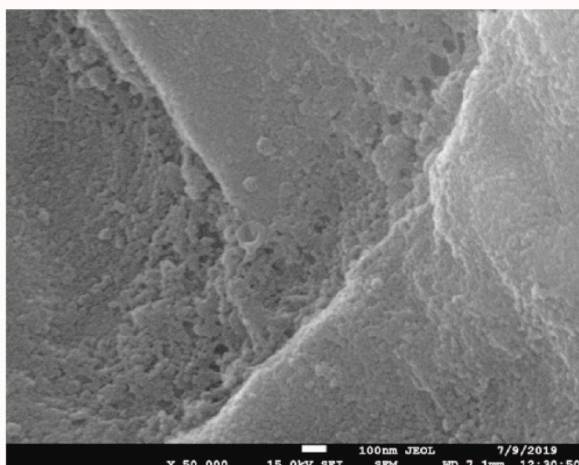
x 2,000



x 10,000



x 50,000



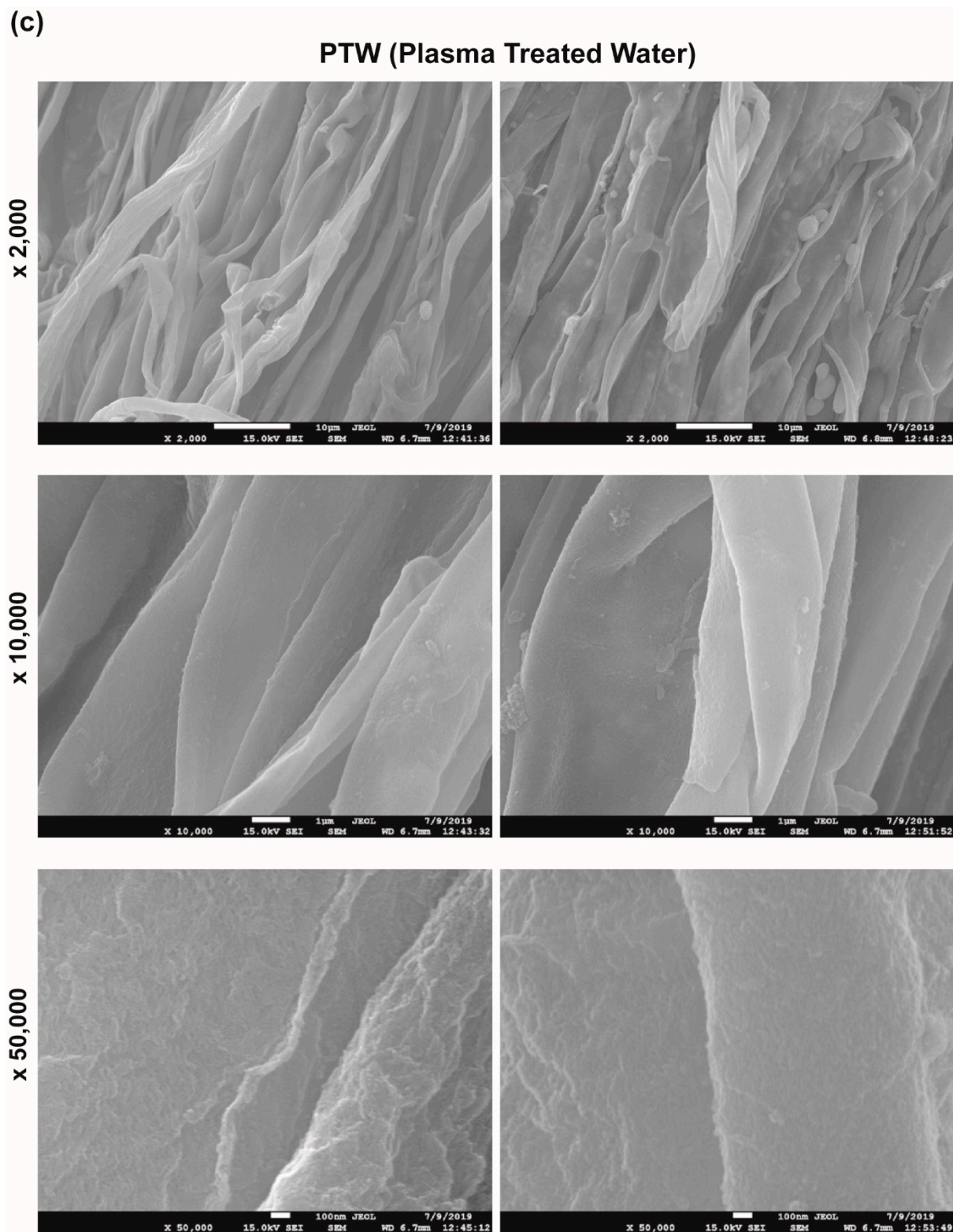


Figure S4. Mushroom surfaces analyzed by SEM after treated with none (a), NTAPPJ (b), and PTW (c) for 15 min.