

# Supplementary Figures

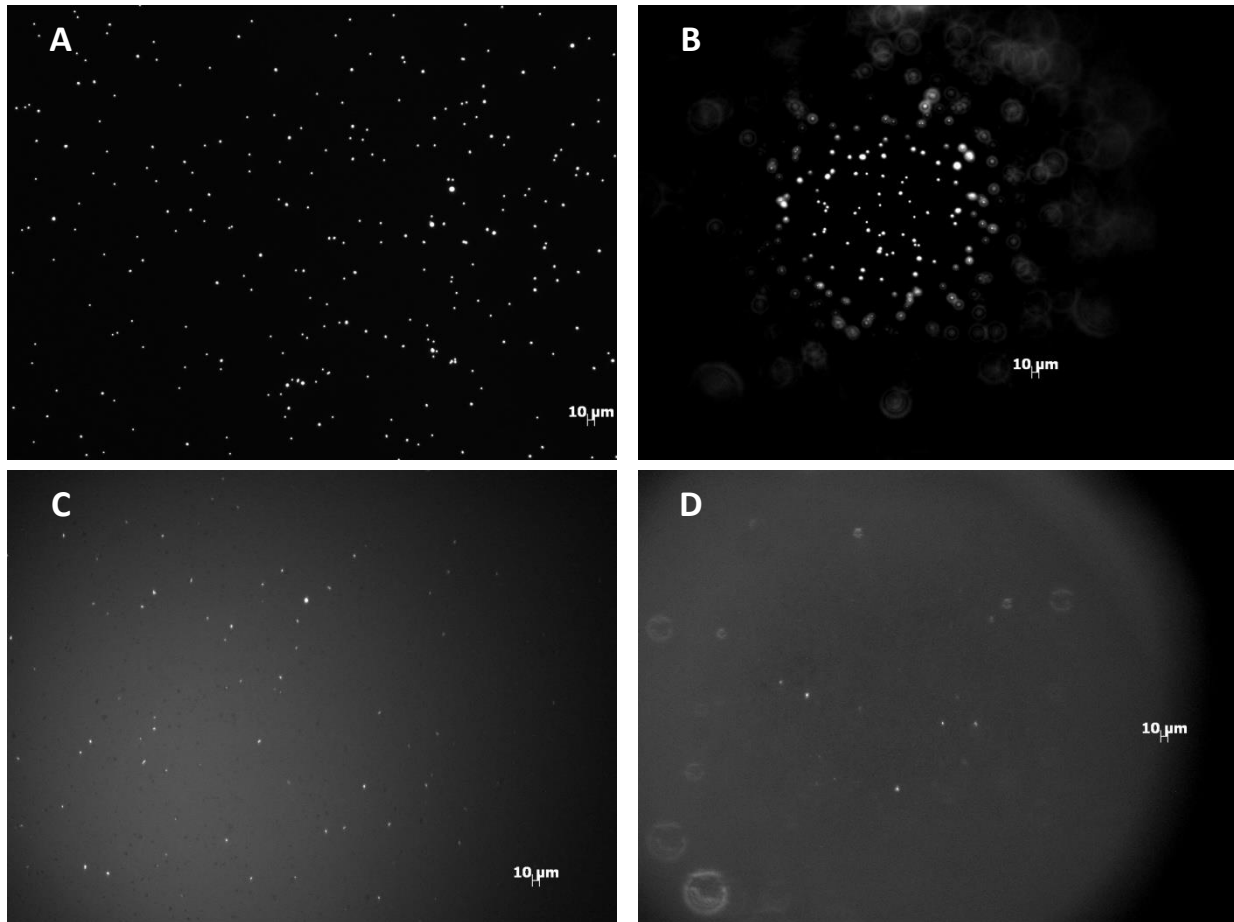


Figure S1. Fluorescent microscope images of the egg surface sprayed with aerosol containing negatively charged FluoSpheres or aerosol with fluorescently labelled *B. subtilis* (strain 3610). (A) Glass slide sprayed with FluoSpheres. (B) Egg surface sprayed with FluoSpheres. (C) Glass beads sprayed with *B. subtilis* cells expressing a red fluorescence protein (REP). (D) Egg surface sprayed with fluorescently labelled *B. subtilis*.

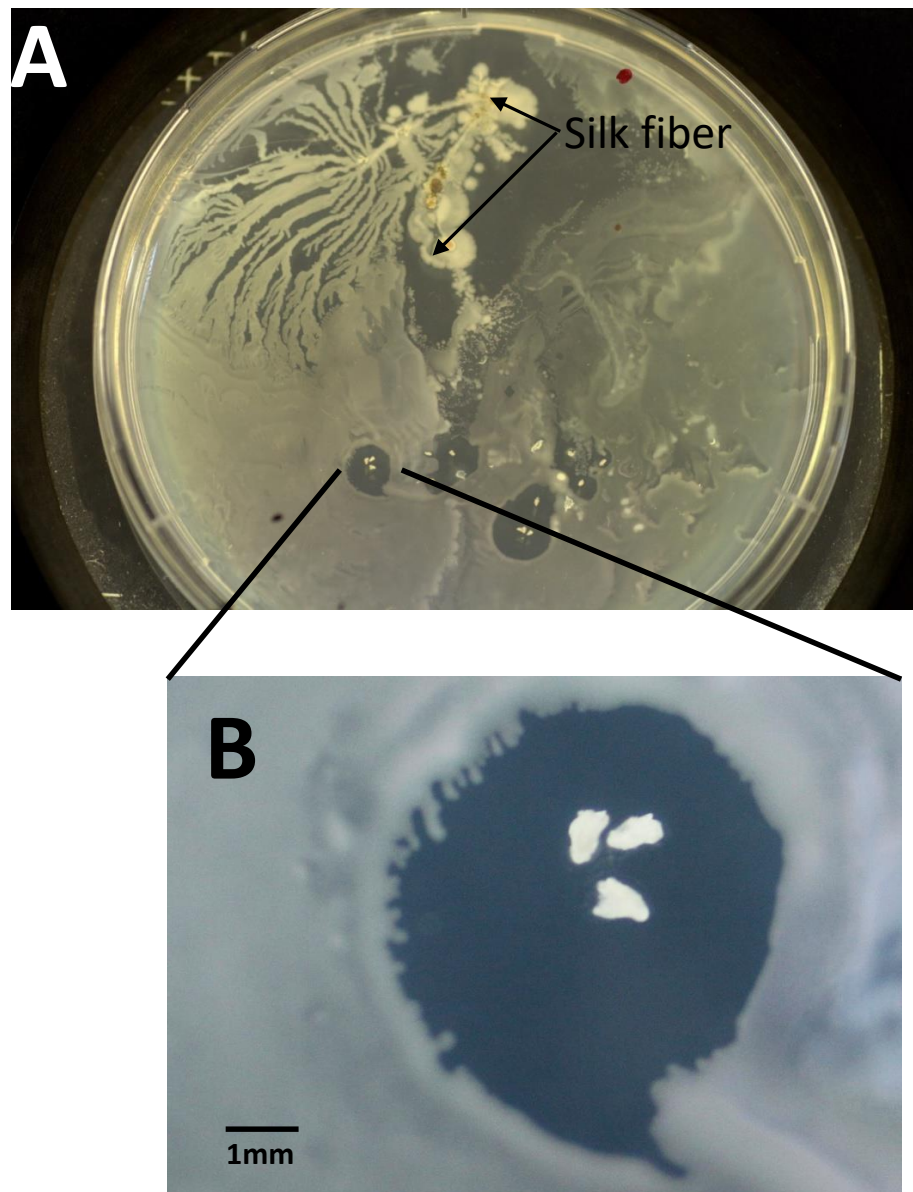


Figure S2. Eggshells inhibit bacterial growth. (A) Bacteria and fungi growing on a silk fiber from the inside of the egg-sac, placed on LB agar plate alongside the egg shells. (B) An enlarged image of C, depicting an inhibition zone around the eggshells.

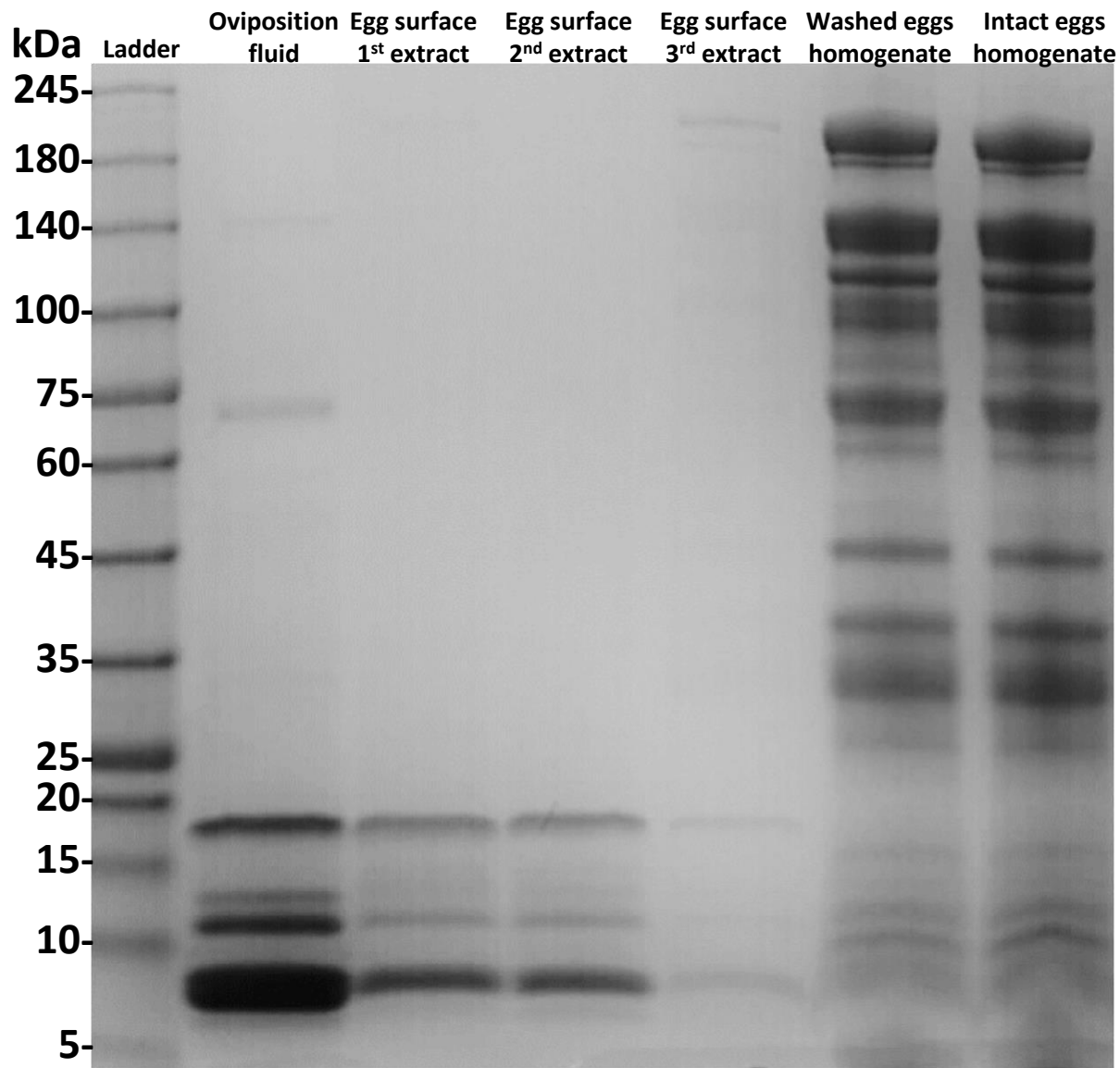


Figure S3. Coomassie-blue stained SDS-PAGE of oviposition fluid, egg surface extract from ~200 eggs with 50  $\mu$ l nano-pure water, the same eggs were washed with another 100  $\mu$ l water (2<sup>nd</sup> extract), the extraction was repeated again with 100  $\mu$ l water (3<sup>rd</sup> extract). The washed eggs (washed eggs homogenate) or intact eggs (intact eggs homogenate) were homogenized in RIPA buffer. Samples were mixed with sample buffer (X5) and loaded on ready made 4-15% polyacrylamide gel (Bio-Rad).

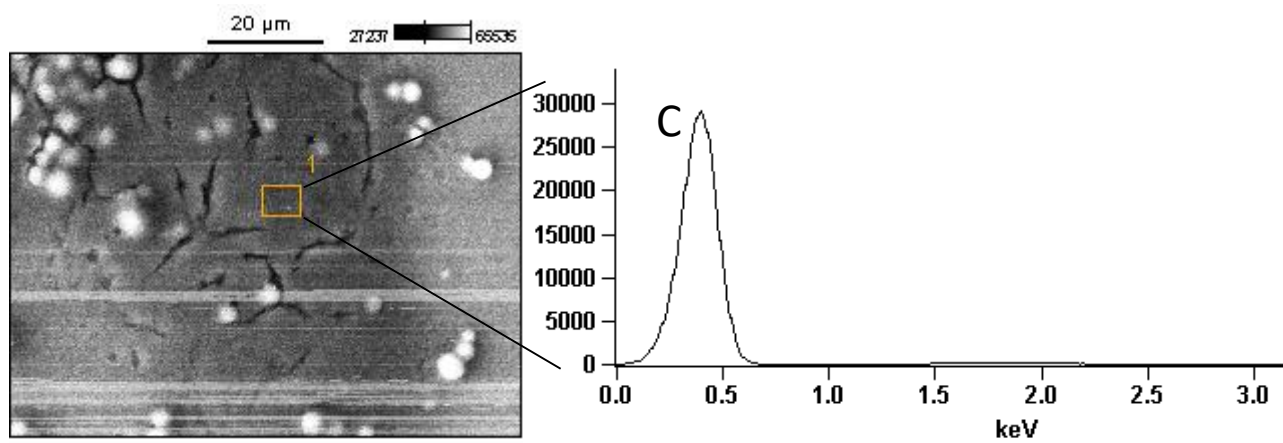


Figure S4. SEM/EDS element composition analysis of the area marked in yellow, indicates that the material encasing the spheres is mainly made of carbon (C), similar to spheres.

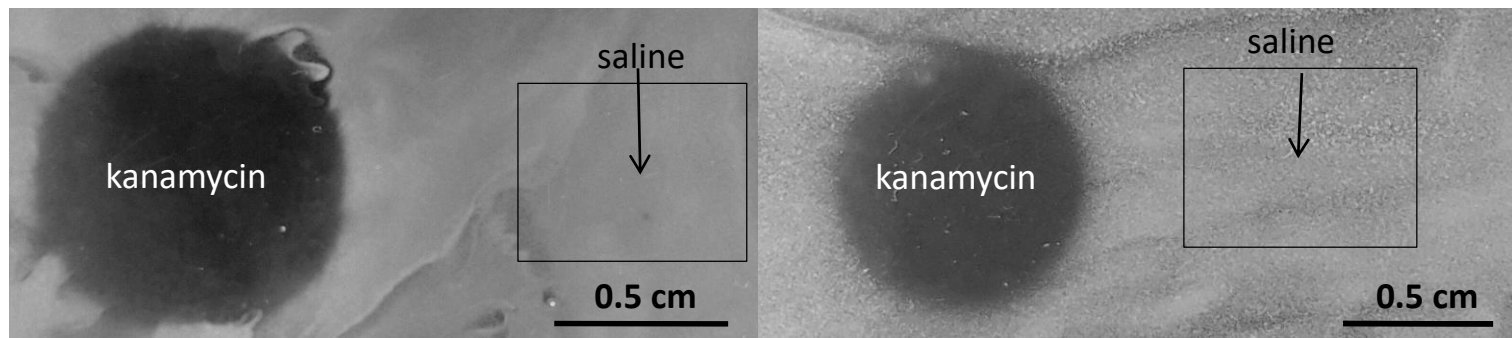


Figure S5. Control treatments for the experiment in figure 3E and F. Positive (Kanamycin) and negative (Saline) controls were applied on both *M. morgani* left and *S. aureus* right on a separate plates.