

Supporting Information (SI)

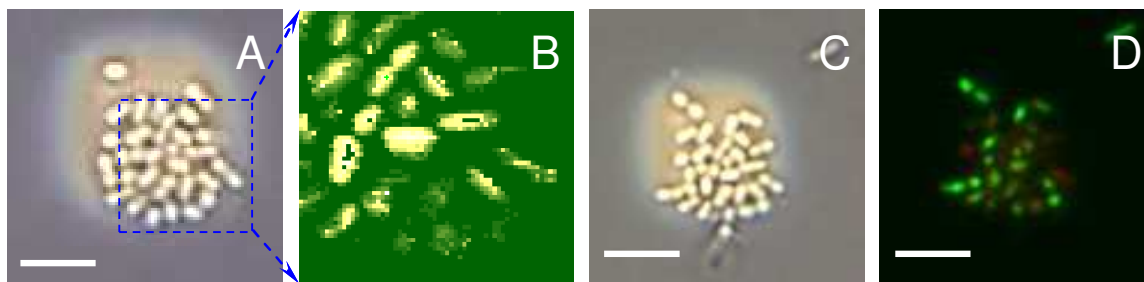


Fig. S1 Viability test: Staining with viability dyes showed that most *S. Typhimurium* cells remained alive after being punctured: (A) Optical image taken before the puncturing experiment; (B) force-volume image of the area marked inside the blue dashed box in panel (A); (C) optical image of the same areas as in (A) taken after the cells were punctured; and (D) fluorescence image of the same area as in (C) after the puncturing, staining and washing. The green fluorescence means the punctured cells were alive. There are fewer cells in (C) and (D) than in (A) because some cells detached when the sample was rinsed with PBS buffer to remove the unbound excess dyes. Scale bar in A, C, D: 5 μm .

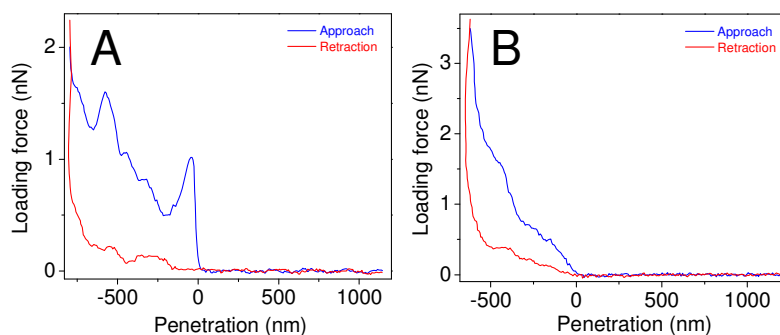


Fig. S2 Puncture curves of (A) a live and (B) a dead (glutaraldehyde-treated) *S. Typhimurium* cell obtained using the same AFM tip. Notice that the dead cell is softer and has shrunk by ~40% in height.

Movie S1 Division of *S. Typhimurium* cells in growth medium at room temperature after puncturing experiment. The movie corresponds to a total observation time of 100 min.