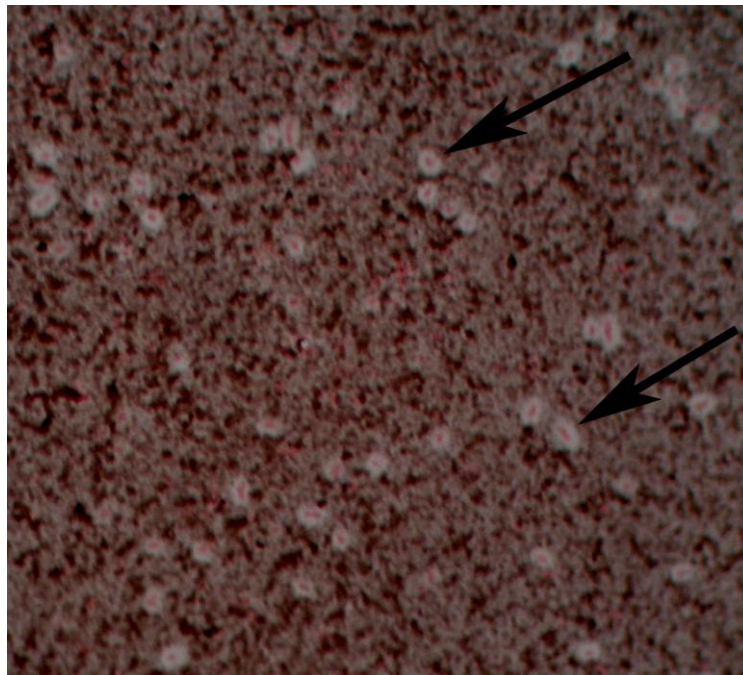


1 Supplementary Figures

2 FIG. S1. Observation of the capsulated *Z. profunda* SM-A87 cells under light microscope.  
3 The capsulated bacterial cells were stained according to Duguid (1) with modification.  
4 Briefly, an aliquot of the fresh bacterial culture was mixed with a drop of India ink,  
5 which was then spread onto a glass slide and dried. A drop of methanol was added on the  
6 slide for 1 min. After drying, the slide was incubated with 2-3 drops of safranin for 30 s  
7 to stain the bacterial cells. Then extra liquid was absorbed by filter paper. The sample  
8 was examined with a light microscope (Olympus CX21, Japan). Black arrows in the  
9 figure indicated the capsulated bacterial cells. The small red spots were bacterial cells  
10 stained with safranin. The white haloes around the bacteria cells were polysaccharide  
11 capsules. Thus the presence of capsules was confirmed by the negative staining method.

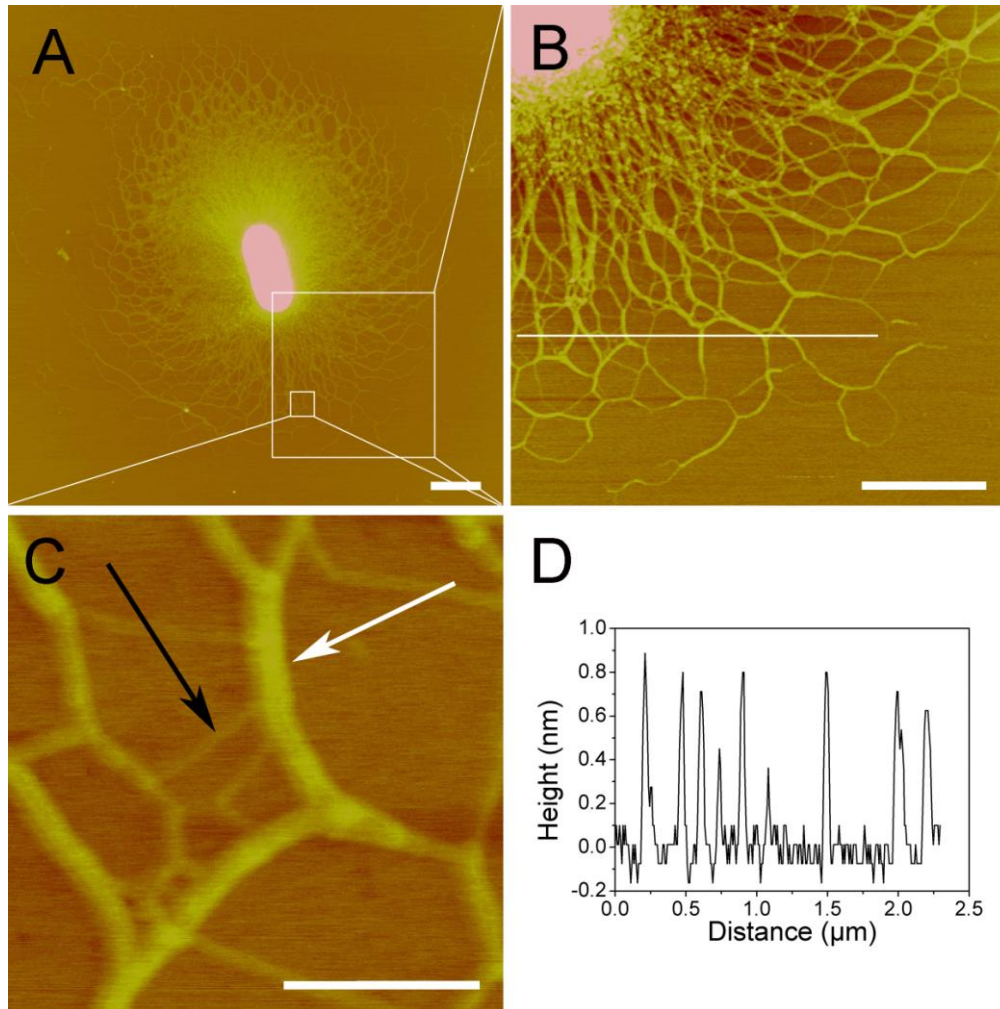


12

13 **Reference**

14 1. **Duguid, J. P.** 1951. The demonstration of bacterial capsules and slime. *J. Pathol.*  
15 *Bacteriol.* **63**:673-685.

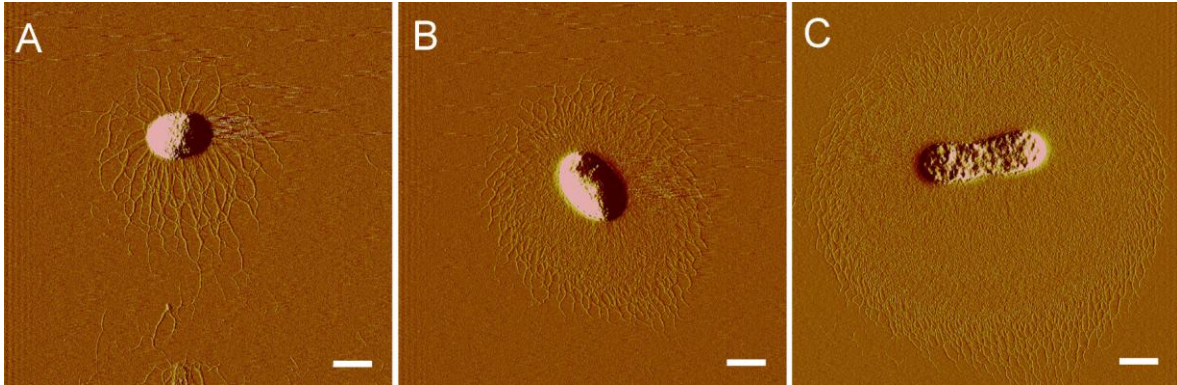
1 FIG. S2. AFM images of the capsular polysaccharide fibrils at different scanning area  
2 (A-C). White line in (B) indicates the position for section analysis of the polysaccharide  
3 fibrils in (D). Black arrow in (C) indicates the thin polysaccharide fibril and white arrow  
4 in (C) indicates the larger polysaccharide fibril. Scale bar: (A, B) 1  $\mu\text{m}$ , (C) 0.2  $\mu\text{m}$ .



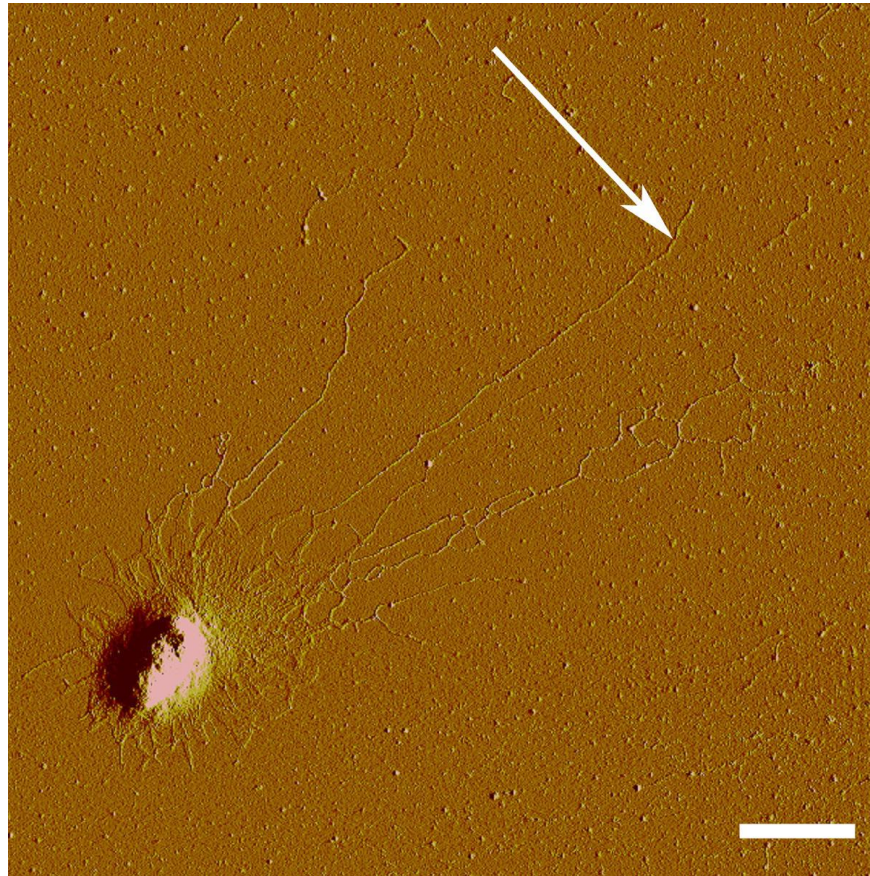
5

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1 FIG. S3. A collection of *Z. profunda* SM-A87 cells imaged with AFM. Different amount  
2 of the polysaccharide fibrils around the cells might indicate different stages of  
3 polysaccharide secretion. Scale bar: 1  $\mu\text{m}$ .

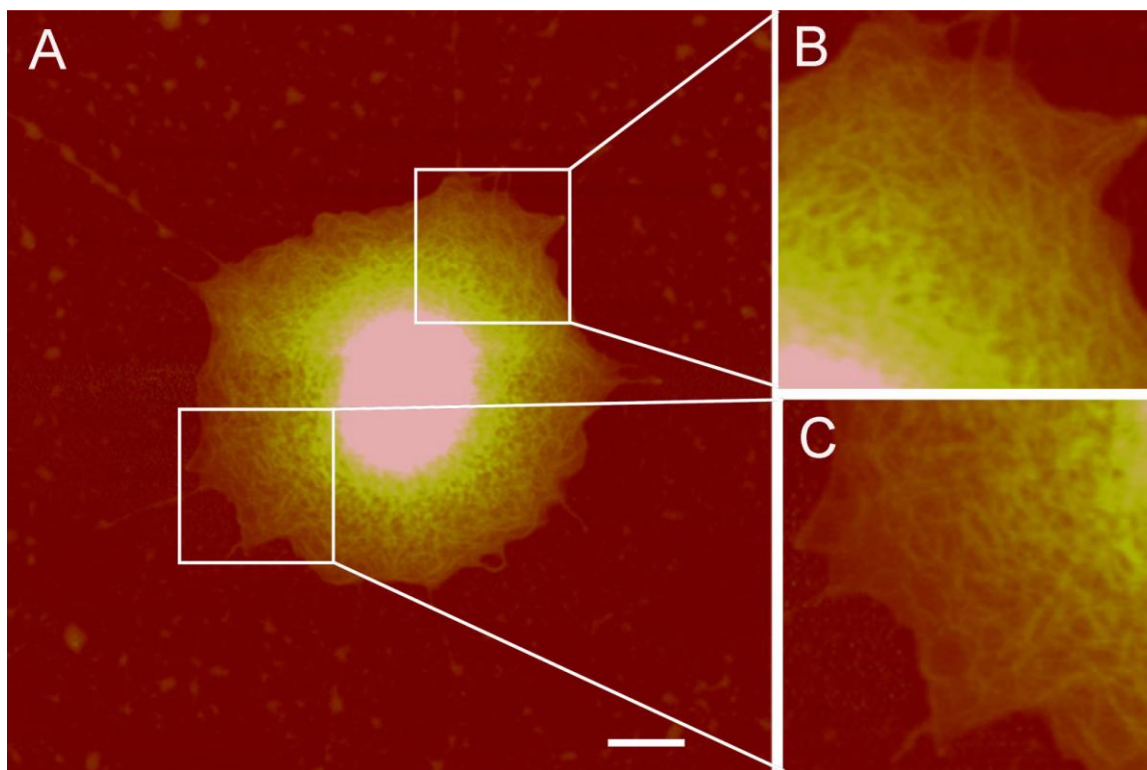


1 FIG. S4. AFM amplitude image of a *Z. profunda* SM-A87 cell, showing its long  
2 polysaccharide fibrils in the capsule. The polysaccharide fibril indicated by the white  
3 arrow is at least 12  $\mu\text{m}$  long. Scale bar, 2  $\mu\text{m}$ .



4

1 FIG. S5. Enlarged height image of Fig. 3E recorded in ScanAsyst mode, showing the  
2 detailed polysaccharide structures in the peripheral area of the capsule in spite of the  
3 covered deliquescent water. Scale bar, (A) 1  $\mu\text{m}$ .



4  
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