

Supplementary information

Adhesion and Bactericidal Properties of Nanostructured Surfaces Dependent on Bacterial Motility

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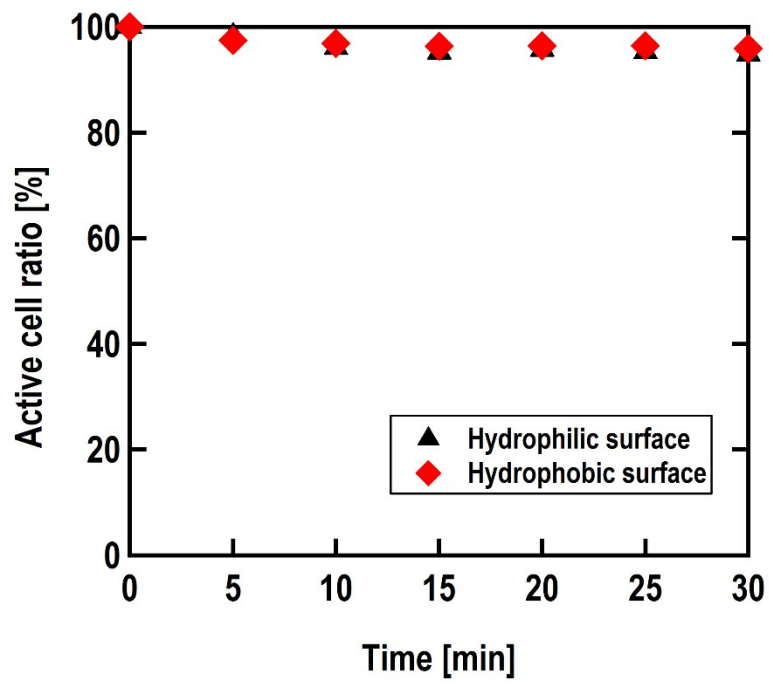
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Movie 1: Movements of Cy3 stained *E. coli* were captured by 100 msec, and 50 images were tracked in total. Here, the contact angle of glass surface was 65°. M1(a), (b), (c) and (d) were movies of RP437, UU2612, RP437 fliC and RP6894, respectively.

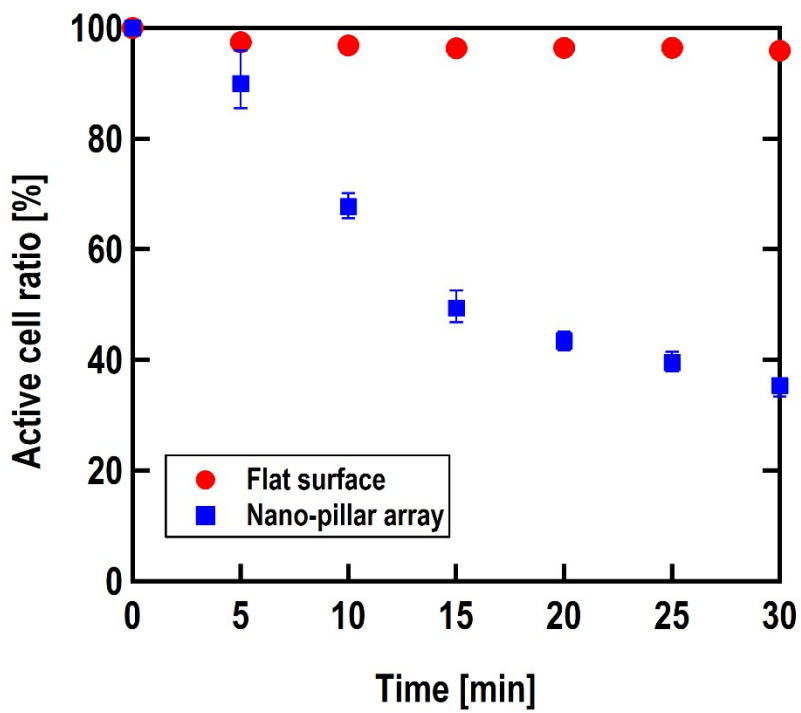
Movie 2: Movements of Cy3 stained *E. coli* were captured by 100 msec, and 50 images were tracked in total. Here, the contact angle of glass surface was 25°, which was obtained after the oxygen plasma treatment. M2(a), (b), (c) and (d) were movies of RP437, UU2612, RP437 fliC and RP6894, respectively.

Fig. S1: (a) Time-dependent active cell ratio of RP437(WT) on the hydrophobic and hydrophilic flat Si substrate. Black triangles and red diamonds represent active cell ratio on the hydrophilic and hydrophobic surface, respectively. (b) Time-dependent active cell ratio of RP437(WT) with/without nano-pillar array on the hydrophobic surface. Blue squares and red circles correspond the Si substrate with/without nano-pillar array.

Fig. S2: SEM image of *E. coli* after the cell membrane damage test. The shape of *E. coli* deformed comparing with that before the test (Fig. 2(b)). The cell sank into the nano-pillar array.



(a)



(b)

Figure S1

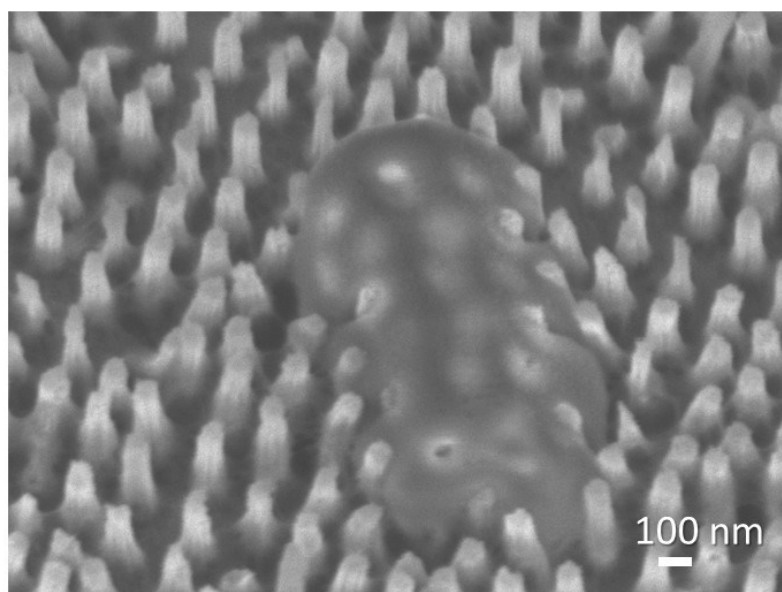


Figure S2