biosensors

MDPI

Supporting Information

New Detection Platform for Screening Bacteria in Liquid Samples

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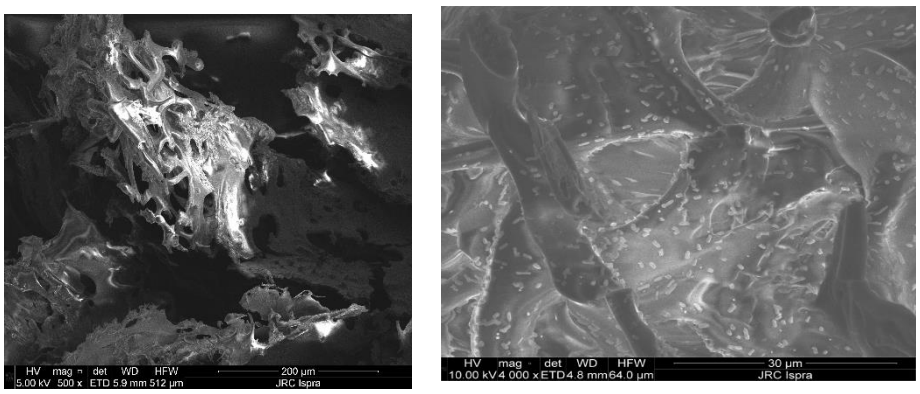

(**a**) (**b**)

Figure S1. Scanning electron microscopy image of (**a**) microporous cryogel (**b**) of *E. coli* bacteria adsorbed on the P(HEMA-AEM) cryogel.

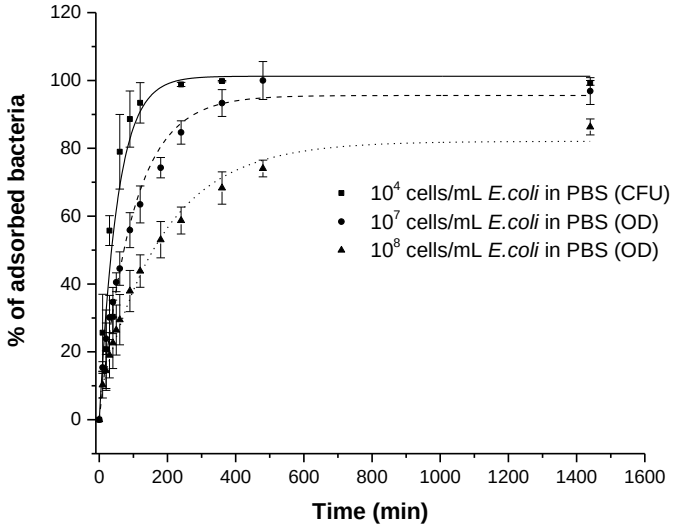

Figure S2. Adsorption kinetics of *E. coli* bacteria (initial concentration = 10^4, 10^7 and 10^8 cells mL^{-1}) onto P(HEMA-AEM) cryogel in PBS. The amount of adsorbed bacteria was determined by subtracting the concentration remaining in supernatant solution measured by turbidimetry (OD_{600nm}) and/or CFU quantification of the initial concentration. The ratio between the cryogel and the bacteria suspension was 45 mg of dried cryogel in 4 mL of PBS bacteria suspension.

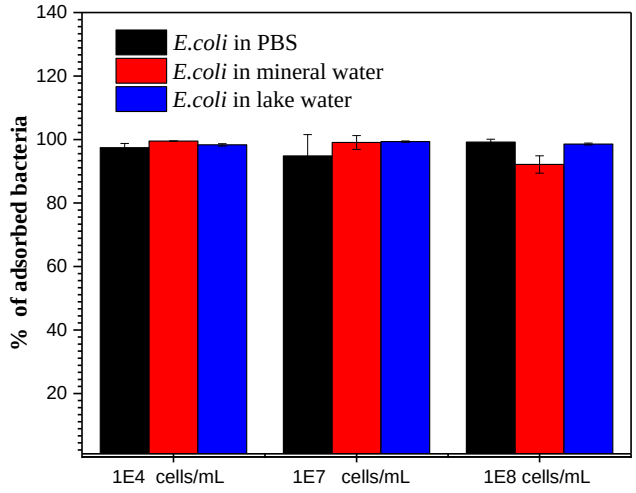

Figure S3. Comparative adsorption of *E. coli* bacteria at the concentration of 10^4, 10^6 and 10^8 cells mL^{-1} in PBS, in lake water and in commercial mineral water. 45 mg of dried cryogel were suspended in 4 mL of bacteria suspension.

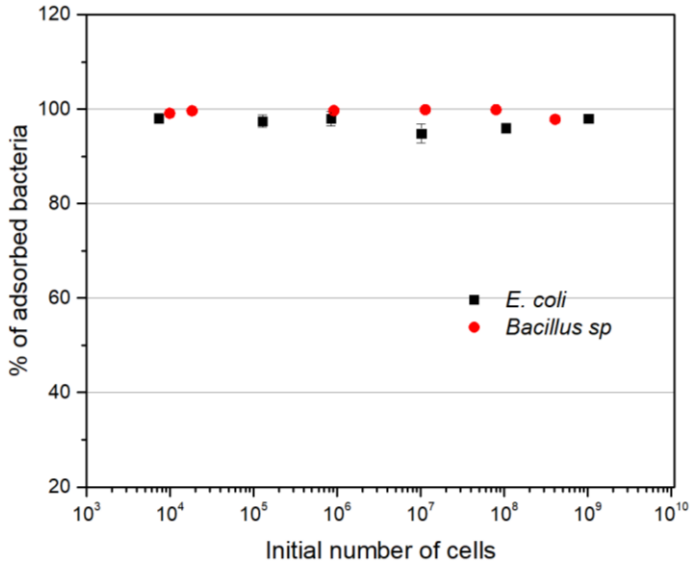

Figure S4. Adsorption of bacteria ranging from 10^3 to 10^8 cells mL^{-1} *E. coli* and *Bacillus sp*. bacteria keeping constant the ratio of cryogel and volume of bacteria to 45 mg per 4 mL.

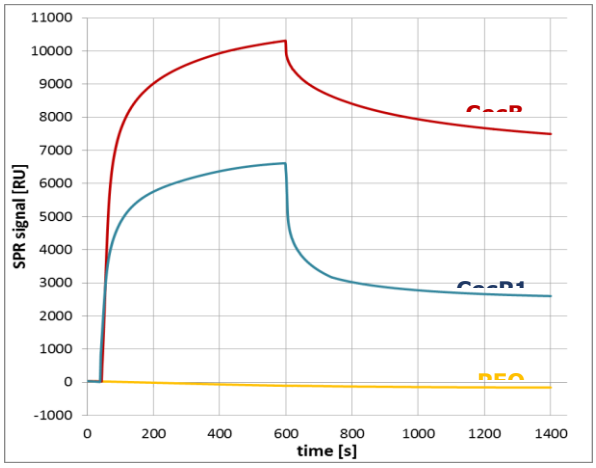

Figure S5. PEO Surface functionalization with Cecropin P1 (CecP1) and Cecropin B (CecB) monitored by SPR.

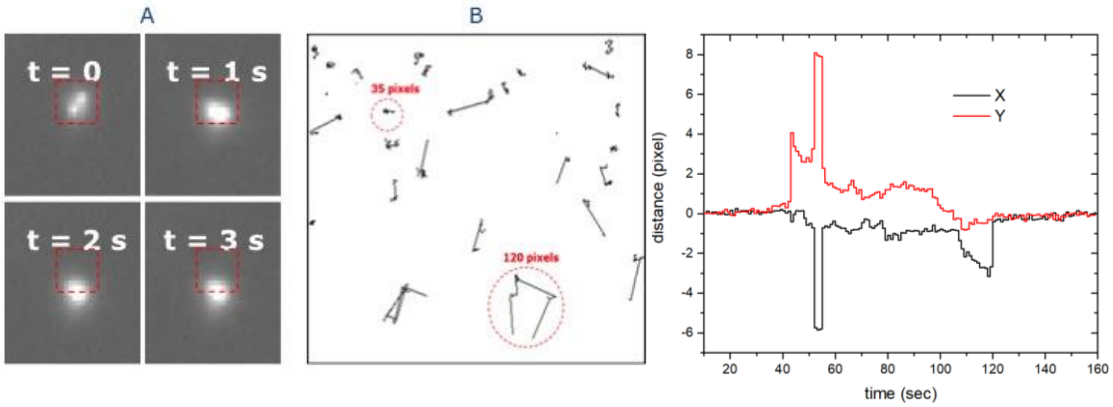

Figure S6. Cell motility is presented as (**a**) shifting of cell position regarding the geometrical centre at time zero, (**b**) vectorial travelled distance of the cell along the 160 frames and (**c**) variation of the X and Y position regarding the time zero (starting position).

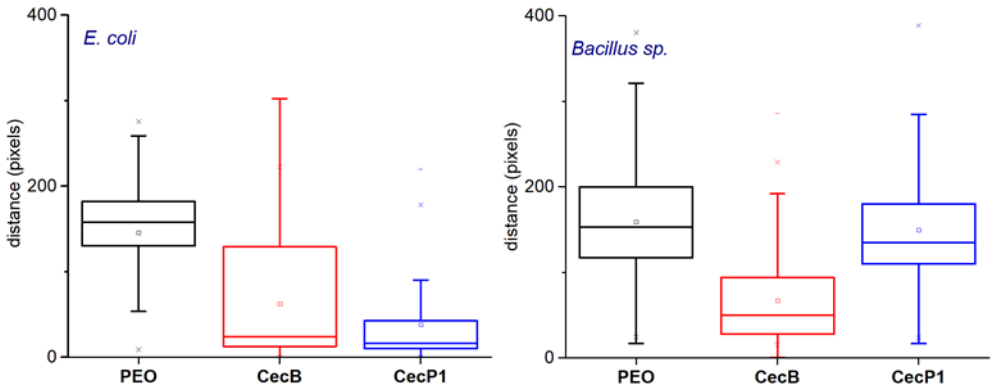

Figure S7. Motility analysis of (**a**) *E. coli* and (**b**) *Bacillus sp.* desorbed from the cryogel on PEO, Cecropin B (CecB) and Cecropin P1 (CecP1).