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CdiGMP signaling at early stages of biofilm formation in *Pseudomonas Aeruginosa* KUN ZHAO, MAXSIM GIBIANSKY, WUJING XIAN, ANDREW UTADA, GERARD WONG, University of California, Los Angeles — Biofilm communities on surfaces constitute an important physiological state of bacteria. CdiGMP is a secondary messenger that has recently emerged as a master regulator of biofilm behavior. It has been shown that cdiGMP can affect bacterial adhesion, motility and exopolysaccharides production, which are important in regulating biofilm formation. However, at a single cell level, the details of how cdiGMP regulate bacterial behavior are largely unknown. Here we examine the dynamics of intracellular cdiGMP levels at early stages of biofilm in *Pseudomonas Aeruginosa*, by using cell tracking techniques. We show that cells with different cdiGMP levels play different roles in the microcolony development at early stages of biofilm. The correlation between Psl and cdiGMP levels is also investigated.

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