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Molecular architecture and assembly principles of *Vibrio cholerae* biofilms

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In their natural environment, microbes organize into communities held together by an extracellular matrix composed of polysaccharides and proteins. We developed an *in vivo* labeling strategy to allow the extracellular matrix of developing biofilms to be visualized with conventional and superresolution light microscopy. *Vibrio cholerae* biofilms displayed three distinct levels of spatial organization: cells, clusters of cells, and collections of clusters. Multiresolution imaging of living *V. cholerae* biofilms revealed the complementary architectural roles of the four essential matrix constituents: RbmA provided cell-cell adhesion; Bap1 allowed the developing biofilm to adhere to surfaces; and heterogeneous mixtures of Vibrio polysaccharide, RbmC, and Bap1 formed dynamic, flexible, and ordered envelopes that encased the cell clusters.

Biography

Veysel Berk completed his Ph.D. from University of California Berkeley. He is a postdoctoral fellow of Prof. Steve Chu, Nobel laureate in Physics and U. S. Secretary of Energy.

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