

Abstract Submitted
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The Effect of Predators on Cholera Biofilms: If it Lyses, We Can Smash It ARBEN KALZIQI, ERYN BERNARDY, JACOB THOMAS, WILL RATCLIFF, BRIAN HAMMER, PETER YUNKER, Georgia Institute of Technology — Many microbes form biofilms dense clumps of cells and proteins on surfaces. Biofilms are complex communities that facilitate the study of biological competition (e.g., two types of microbes may compete to form a biofilm in the same location) and interesting physics (e.g., the source of a biofilm's rigidity). *Vibrio cholerae* can produce biofilms which have a network-like structure however, cholera can be genetically engineered to kill other cholera with different genotypes, which leaves behind a structureless slime rather than such a biofilm. Through mechanical creep testing of both predator-prey and non-predator populations, we found that the predator-prey population responds viscously and decreases in height with repeated compression, whereas the non-predator population responds elastically and maintains its original height. The current work suggests that cell lysis after killing disrupts biofilm formation, preventing microbial colonies from forming rigid networks.

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