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COVER

Colony expansion of socially motile *Myxococcus xanthus* bacteria depends on cell growth, type IV pili activity, and self-produced exopolysaccharides.



Microbes can use self-produced molecules to coordinate their actions and perform collective tasks. We present a mathematical model to describe the mechanism driving social motility in the gram-negative bacterium *M. xanthus*. Our model, which was confirmed by long-term colony expansion experiments, reveals that exopolysaccharide production allows the cells to move collectively across surfaces as a coherent group. Expansion of a *M. xanthus* colony incubated on a nutrient agar surface for 4 days at 32°C is shown in this stereo-microscope image. [Patra et al.](#)

Image Credit: Kimberley Kissoon and Heidi B. Kaplan