

Modelling the development of myxobacterial fruiting bodies

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Project description

Myxobacteria show a complex developmental cycle, which culminates in the formation of multicellular fruiting bodies. Myxobacteria do not have flagella and move on solid surfaces in the direction of the long axis of the cell by so-called gliding. A cell reverses the direction of movement frequently. The process of movement is complex and highly regulated. Collision of cells increases the probability of their reversal, so the reversal frequency of each cell is changing as the development of the bacterial population progresses. Coordinated movement and reversal of individual cells is responsible for the formation of traveling waves, streams and aggregates of cells which later mature into fruiting bodies. By means of computational models, we try to understand the mechanisms and regulation of this process.



Gliding Myxobacteria

References

Kaiser, D (2003). Coupling cell movement to multicellular development in myxobacteria. In: *Nature Reviews Microbiology* 1, pp 45-54.