

Abstract Submitted
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Active motility in bimodular bacterial aggregates¹ YU ZENG, BIN LIU, University of California Merced — Dispersal capability is essential for microorganisms to achieve long-distance translocation, thus crucial for their abundance in various environments. In general, active dispersals are attributed to the movements of self-powered planktonic cells, while sessile cells that live a colonial life often disperse passively through flow entrainments. Here, we report another means of active dispersal employed by aggregates of sessile cells. The spherical rosette colonies of the bacterium *Caulobacter crescentus* are aggregates of sessile stalked cells, of which a small proportion undergo cell division, grow active flagella and effect whole-rosette motility. We show that these rosettes actively disperse both in bulk water and near the solid-liquid interface. In particular, the proximity of a self-powered rosette to the solid surface promotes a rolling movement, leading to its persistent transportation along the solid boundary. The active dispersal of these rosettes demonstrated a novel mode of colonial transportation that is based on the division of labor between sessile and motile cells.

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Yu Zeng
University of California Merced

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