

How unicellular yeast form a community for the benefit of long-term survival.

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Living organisms have been traditionally classified into two main categories: unicellular and multicellular. However, the boundary between these two groups are less strict and clear than was previously presumed. Studies on the unicellular communities have revealed that various properties, processes and behaviour so far mainly associated with metazoa are also important for the development and survival of facultatively multicellular microbial populations. I will discuss these phenomena using example baker yeast *Saccharomyces cerevisiae*, of one of the most popular model microorganism. Unicellular *S. cerevisiae* form communities by staying together or coming together scenarios that greatly influence genetic composition and properties of the emerging group. Cells within the structured colony, grow, age and experience differences in its microenvironment that leads to phenotypic heterogeneity. This leads to multiple social interactions within colony including cooperation, division of labour but also competition and cheating. Such cell strategies differentiation within a colony can be evolutionary beneficial for the long-term survival of a community in the unpredictable environment.

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