

***Dictyostelium* (and other Social Amoebae)**

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Dictyostelium discoideum and other social amoebae (also known as cellular slime molds) are ideal for student research and laboratory instruction. These eukaryotic soil organisms have an unusual life cycle wherein amoebae exist as independently feeding cells, but once food is depleted, starving cells initiate the social phase of the life cycle. Two types of developmental pathways are available to starving amoebae: an asexual one that leads to the development of fruiting bodies or a sexual one that results in the production of macrocysts. In either case, previously individual cells collect together to form a multicellular structure. Because cellular slime molds undergo the same basic developmental processes as more complex organisms, they have been used extensively to study biological problems such as gene expression, cell adhesion, cell recognition, cell communication and signaling, cell motility, cell differentiation, and morphogenesis. And because social amoebae are easy to grow, maintain, and manipulate in the laboratory, they are ideal for student research projects and laboratory instruction in introductory biology courses and more advanced courses such as cell biology, developmental biology, microbiology, and ecology.