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The Costs of Altruism in the Social Amoeba Dictyostelium discoideum

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The Costs of Altruism in the Social Amoeba *Dictyostelium discoideum*

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Genotypic makeup of different *Dictyostelium discoideum* strains can contribute to its social behavior. For instance, some strains contribute disproportionally to the spore head rather than the stalk in mixes, thus, reaping the benefits of altruism without fully paying the associated costs. To gain further insight on social cheating, I will test the effects if genotype, cell frequency and the presence of symbionts on competition during the social cycle with fluorescent cell dyes. My hypothesis is that when a "cheater" genotype significantly outnumbers another genotype, the amount of cheating among the cheater will be reduced.