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Studying Competition in the Vegetative State: Using Dictyostelium discoideum Sex Locus as a Stable Marker

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Studying Competition in the Vegetative State: Using *Dictyostelium discoideum* Sex Locus as a Stable Marker

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Dictyostelium discoideum is an excellent model for studying cooperation and control of conflict. When these amoebae starve, they aggregate together to form a multicellular slug and eventually a fruiting body. *D. discoideum* genotypes compete for space in the fruiting body and avoid forming the stalk cells, which will die. Most studies have only focused on competition when these amoebae aggregate together and become multicellular. However, the amoebae spend most of their life in the unicellular stage. Therefore, it is necessary to develop techniques to study interactions between *D. discoideum* during their unicellular, vegetative state. The recently discovered sex locus for *D. discoideum* provides a stable genetic marker to identify a clone throughout its lifetime. By taking advantage of the distinct regions within the sex locus, qPCR primers have been developed to give quantitative information of the results of mixed genotype interactions. This technique will provide an opportunity to fill the gaps in our current understanding of interaction throughout the *D. discoideum* lifecycle.