Construction of symbiotic liquid culture system for *E. coli* and *D. discoideum*

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SUMMARY

When *Escherichia coli* and *Dictyostelium discoideum* are mixed and allowed to grow on minimal agar plates, mucoidal colonies that did not exist before emerged. However, these mucoidal colonies were hard to analyze because they were not uniform and each colony was in a different growth phase. We therefore constructed a symbiotic liquid uniform culture system of *E. coli* and *D. discoideum* to analyze the symbiosis in more detail using special medium. In this medium these two species could not grow independently, but they could grow as a co-culture. We picked one-by-one each medium component out of SIH medium to prepare a base medium and tested this medium to see if we could grow these two species independently. Using this method we were able to identify some essential components for their growth. This result will be helpful to complete the next step of making a new medium in which the two species can live together and exchange nutrients that are not present in the medium.