

Different glycans are expressed during fruiting body development in the aggregative ciliate *Sorogena stoianovitchae*

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SUMMARY

The aggregative ciliate *Sorogena stoianovitchae* forms an aerial fruiting body. Under conditions such as high cell density and mild starvation, a number of *Sorogena* cells aggregate beneath the water surface and the aggregate rises aerially by secreting stalk material that consists of polysaccharides (probably mucopolysaccharides). This suggests that some kind of glycan may be involved in the development of the fruiting body. Here, I survey the expression patterns of glycans using fluorescein (FITC)-labeled lectins (Con A, WGA, RCA120, DBA, UEA I, SBA, and PNA) during the development of the fruiting body. When using Con A, I observed punctate fluorescence of organelles similar to mucocysts over the whole cytoplasm at all the examined stages of the development; however, the fluorescence gradually decreased as the development proceeded. When using WGA, I observed fluorescence around the oral structure of the preaggregation cell and small dots of cytosolic fluorescence widely dispersed in the cells after the aggregation. When using the other lectins, I observed no fluorescence. These results suggest that *Sorogena* mainly utilizes the high-mannose type N-linked glycan and proteoglycan. The decrease of punctate fluorescence after the secretion stage labeled by Con A suggests that N-linked glycan is secreted as the mucous matrix and stalk material. The fluorescence patterns in the oral structure and the cytosol, labeled by WGA, show that the proportions of the cell change before and after the aggregation, although functions of these glycans are unclear.