

# Reversible induction of multicellular aggregation in the heliozoon *Raphidiophrys contractilis*

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## **SUMMARY**

Heliozoans such as *Actinophrys sol* and *Raphidiophrys contractilis* show a characteristic regular distribution pattern on the substratum. When the heliozoans fed on small food organisms such as *Chlorogonium*, obvious redistribution occurred, and they finally approached each other to form cell clusters. When larger protozoa such as *Paramecium* and *Tetrahymena* were ingested, the heliozoans became fused with neighbors to form a syncytium, in which a large single food vacuole was located. Such a “cooperative hunting” behavior was common among different heliozoon species belonging to either actinophryids or centrohelids. In *R. contractilis*, formation of a large cell aggregate was reversibly induced by increasing the concentration of yeast extract and proteose peptone in the culture medium. The cell aggregate was 1-2 mm in diameter, and was composed of thousands of individuals.