The hidden language between microalgae and bacteria

João Câmara Manoel

Laboratory of Algal Biotechnology, Centre Algatech, Institute of Microbiology CAS, TŘEBOŇ

Faculty of Science, University of South Bohemia, ČESKÉ BUDĚJOVICE

Although the primary function of heterotrophic bacteria is decomposition, it is now accepted that some bacteria also play a part in host growth promotion, establishing mutualistic interactions with microalgae. To facilitate this co-habitation of ecological niches, intricate mechanisms must have evolved for co-regulating each other's growth. A crucial aspect for the establishment and maintenance of epibiotic microbial population is expected to possess a tool that requires a selective specificity, triggers the genetic regulation, and coordinates the physiologies of the different cell types. This kind of cell–cell communication is known as quorum sensing (QS).

Extensively studied in bacteria-to-bacteria communication, it is known that QS can also transpose the kingdom barrier (REF). Understanding the communication algae and bacteria may thus expand our current knowledge of the biologically relevant mechanisms underpinning natural ecosystems.

To better understand this communication the green alga *Monoraphidium sp*. was supplemented with a concentrated extract from the supernatant of the culture of this alga. Although not definitive, preliminary data appears to suggest that there is an effect on its overall growth parameters.