Electromagnetic regulation of cell density in *Paramecium caudatum*

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Abstract

In order to approach the electromagnetic communication among cells one has to isolate electromagnetic from chemical cell signals. This is best achieved with the use of glass-barriers separating cell populations from each other. The handiness and possibilities of this barrier-method is described. The talk then focuses on research performed with the aquatic unicellular ciliate *Paramecium caudatum*. In summary, very significant effects on cell division rates and energy uptake were observed, all of which in dependence to separating material and cell numbers in cell populations on the other side of the barrier. Further studies strongly support the hypothesis that the electromagnetic communication serves the regulation of population density. Additional analysis shows that the cells stand in relation with a not yet identified environmental factor, and that they display a relational pattern resembling relations in two-photon quantum experiments. Finally, technical interference with electromagnetic cell communication is discussed.