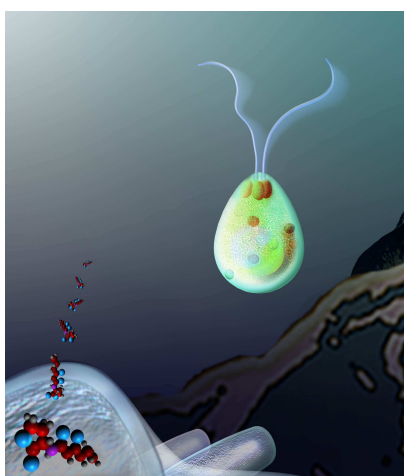


Bacterial conversations: talking, listening and eavesdropping

Organised and edited by Ian Joint, J Allan Downie and Paul Williams

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One of the most fascinating discoveries in microbiology is that bacteria communicate with each other. Bacterial communication is called 'quorum sensing' because it is a density-dependent process that functions when a population is of sufficient size. It involves the production of diffusible signal molecules that co-ordinate gene expression. Quorum sensing systems are very widespread and modulate many physiological processes in bacteria associated with humans, plants, animals, soils and marine and fresh waters. It is increasingly seen as central to the success of bacteria.

Understanding the role of quorum sensing in pathogenicity offers the opportunity to develop novel approaches to combat human, animal and plant diseases. There is increasing evidence that animals and plants "listen" to bacterial signals and utilise these signals in complex ways. Some plants and animals produce molecules that mimic quorum sensing molecules and so confuse regulation in bacteria; blocking of cell-to-cell signalling may have evolved as a successful strategy to resist infection by pathogenic bacteria.

This special issue features the latest research in quorum sensing – how bacteria communicate with each other, how higher organisms respond to bacterial signal molecules and the latest approaches to interfering with quorum sensing.

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