

IN BRIEF

QUORUM SENSING

Identification of the central quorum sensing regulator of virulence in the enteric phytopathogen *Erwinia carotovora*: the VirR repressor

Burr, T. *et al. Mol. Microbiol.* **59**, 113–430 (2006)

In *Erwinia carotovora*, quorum sensing (QS) is known to have a central role in regulating virulence-gene expression. Homologues of the components of the prototypic *Vibrio fischeri* QS system, the acyl-homoserine lactone (AHL) synthase LuxI and the response regulator LuxR, have been identified in *E. carotovora* but, until now, the identity of the regulator that prevents the QS-controlled virulence factors from being produced at low cell density has been unknown. Tom Burr and colleagues have provided this missing link by identifying a novel virulence regulator, VirR, in *E. carotovora* subsp. *atroseptica* and demonstrating that VirR negatively regulates the production of exoenzymes in the absence of the *Erwinia* QS signalling molecule.

TECHNIQUES & APPLICATIONS

An ordered, nonredundant library of *Pseudomonas aeruginosa* strain PA14 transposon insertion mutants

Liberati, N. T. *et al. Proc. Natl Acad. Sci. USA* **103**, 2833–2838 (2006)

Frederick Ausubel and colleagues report in *PNAS* on the construction of a non-redundant transposon-insertion library for *Pseudomonas aeruginosa* strain PA14 using a derivative of *Himar1*, a member of the *mariner* transposon family. The library allows the *P. aeruginosa* genome to be scanned using just 5,459 mutants, and so will be invaluable for high-throughput screening of the *P. aeruginosa* genome. An accompanying database (the PA14 transposon insertion mutant database, PATIMD) has been developed to facilitate mutant sorting and analysis, and is publicly available at <http://ausubellab.mgh.harvard.edu/cgi-bin/pa14/home.cgi>.

MALARIA

A *var* gene promoter controls allelic exclusion of virulence genes in *Plasmodium falciparum* malaria

Voss, T. S. *et al. Nature* **439**, 1004–1008 (2006)

A model outlining how the malaria parasite *Plasmodium falciparum* controls antigenic variation of the key virulence factor PfEMP1 has been proposed in a recent issue of *Nature*. PfEMP1 is encoded by the *var* gene family, which contains 60 *var* genes, each of which encodes a distinct PfEMP1 protein. Only one *var* gene is transcribed in each *P. falciparum* parasite at any one time, facilitating antigenic variation of PfEMP1, but the allelic exclusion mechanism involved has been unclear until now, although it was known that epigenetic regulation was involved. Voss *et al.* propose that allelic exclusion is controlled by a *var* promoter sequence, activation of which is sufficient to initiate transcription of one *var* gene while ensuring that the other 59 *var* genes are silenced, and suggest that activation occurs only in a particular 'expression spot' in a perinuclear compartment.