Articles of Significant Interest Selected from This Issue by the Editors

Genomic Insights into the Skin Tropicity of *Streptococcus pyogenes*

Group A *Streptococcus pyogenes* (GAS) can be invasive or noninvasive and can exhibit preference for infections of the skin, nasopharynx, or both. Bao et al. (p. 1712–1724) performed genomic comparisons of two similar skin-tropic clinical GAS isolates, one invasive (M53 AP53) and one more benign (M53 Alab49), along with comparisons with other known strains. They identified multiple genomic signatures, including point mutations, pseudogenes, transcriptional regulatory differences, and prophage acquisition differences, that in combination allowed the development of hypotheses regarding tropicity and invasiveness. These factors may have been involved in shaping the adaptation of GAS in specific infectious environments and contributed to its virulence.

Modeling Helps in Reading Phage Properties from Plaque Morphology

Plaque formation provides a window into understanding phage-bacterium interactions in physically structured populations. Mitarai et al. (p. 1783–1793) have developed a model for plaque morphology for both virulent and temperate phages and verified the model with spot plaques formed by the temperate phage λ/H9261 and its mutants. The model highlights how phage properties such as the multiplicity of infection (MOI) in lysis/lysogeny decisions can be reflected in plaque morphology. The model also suggests that cII may have unknown regulatory features. The analyses argue for temperate phages having an advantage in exploiting limited resources in spatially distributed microbial populations.

Facilitated Dissociation of a Nucleoid-Associated Protein from Isolated Bacterial Chromosomes

In single-molecule studies, the *Escherichia coli* nucleoid protein Fis has been observed to have its off-rate from DNA accelerated by the presence of Fis or other DNA-binding proteins in solution. Now, Hadizadeh et al. (p. 1735–1742) have observed “facilitated dissociation” on bacterial chromosomes released from *E. coli* cells. *In vivo*, this process may allow bursts of synthesis of DNA-binding proteins (as occurs for Fis during nutrient upshift) to quickly remodel the chromosome landscape, affecting global gene expression and other DNA-dependent processes. These findings also suggest caution relating off-rates measured under dilute solution conditions *in vitro* with protein-DNA lifetimes *in vivo*.