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Articles of Significant Interest in This Issue

Clues to the Mechanism of Metabolic Switching of *Mycobacterium tuberculosis* during Hypoxia

Mycobacterium tuberculosis has evolved to survive and grow under a hypoxic environment within the phagosome. Singh et al. (e00705-19) report that the virulence regulator PhoP responds to hypoxia, the dormancy signal, and effectively integrates hypoxia with nitrogen metabolism. Consistently, both during hypoxia and under nitrogen-limiting conditions, the *phoP* locus controls key genes involved in nitrogen metabolism, and under hypoxia the Δ*phoP* mutant shows growth attenuation even with surplus nitrogen. These observations showing a novel function of PhoP in integrating nitrogen metabolism with hypoxia have significant implications for the mechanisms of intracellular survival and growth of the tubercle bacilli.

The Core Promoter Structure in *Bifidobacterium*

Bacterial promoters have been studied over the last 40 years with a focus on model organisms. However, the structures of core promoters of model organisms may have different features in genetically divergent bacteria. Kozakai et al. (e00540-19) evaluated the structure of *Bifidobacterium longum* NCC2705 promoters and compared them to those in other bacteria with transcriptome sequencing (RNA-Seq), bioinformatics, and exhaustive mutant analyses. The most frequent and optimal motifs were similar to those in other bacteria. However, conserved spacer lengths were 11 bp as well as 17 bp, and the sigma factor has a particular polar domain in the genus *Bifidobacterium*. Hence, it would be valuable to reevaluate the promoter structure in other organisms.

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