



Articles of Significant Interest Selected from This Issue by the Editors

Fur Associates Cytochrome *c* Production with Iron Content

Iron reduction is a signature of *Shewanella oneidensis* and this process relies on a large number of cytochromes *c*, which *per se* are iron-containing proteins. Thus, iron plays an essential and special role in iron respiration, but it remains largely unexplored. In this study, Fu et al. (e00039-18) have shed light on this topic by probing impacts of Fur, the master regulator of iron homeostasis, on respiration. The loss of Fur causes a general defect in respiration, a result of imbalanced iron homeostasis and dissociation between iron and cytochrome *c* production.

Bathroom Hand Dryers Blow Bacteria and Their Spores upon Surfaces

Multiple bathrooms in basic science research areas in an academic health center were found to blow bacteria on surfaces in a study by Huesca-Espitia and colleagues (e00044-18). These bacteria undoubtedly came from bathroom air and included some potential human pathogens. A *Bacillus subtilis* strain, spores of which are made in large amounts in one basic research laboratory, was also deposited on surfaces in bathrooms, including ones ~400 ft from the spore laboratory, and comprised a small percentage of bacteria deposited by hand dryers and in bathroom air. These *B. subtilis* bacteria were largely present in bathroom air and deposited by hand dryers as spores.

Variable Membrane Protein A of Flavescence Dorée Phytoplasma Binds Epithelial Cells of the Insect Vector *Euscelidius variegatus*

Epidemic spread of phytoplasmas from plant to plant relies on their ability to colonize insect vectors. Their adhesion to insect midgut cells constitutes the first step towards the circulative and propagative cycle into insect's body. As no mutant of these noncultivated bacteria can be engineered, the adhesin function of the variable membrane protein A was measured using VmpA-coated fluorescent beads and adhesin-deficient recombinant spiroplasmas expressing VmpA in a study by Arricau-Bouvery et al. (e02487-17). Fluorescent and electron microscopy shows that the protein VmpA specifically binds insect vector cells in culture and the perimicrovillar membrane of the insect midgut.

Novel High-Throughput Method for Analysis of Multiple Nitrogen Cycle-Associated Genes

To understand the ecology of the nitrogen (N) cycle, it is important to analyze the abundant and diverse microbes responsible for N cycling. The absence of a high-throughput tool to quantify and sequence associated genes has limited our ability to study the N cycle. Oshiki et al. (e02615-17) developed a microfluidic quantitative PCR chip system to quantify multiple N cycle-associated genes simultaneously from environmental samples. The amplicons can be recovered from the chip and sequenced to assess the diversities of N cycle-associated genes. As a result, this "nice" tool should significantly advance our ability to explore the N cycle in various environmental samples.

Hemolymph Microbiomes of Three Aquatic Invertebrates

Hemolymph (blood) is a critical site in the host immune response. Zhang et al. (e02824-17) developed a culture-independent cell extraction method that could separate microbial cells from the hemolymph of three aquatic invertebrates (mud crab, whiteleg shrimp, and Portuguese oysters) and further demonstrated that the hemolymph of each harbors a much higher microbial abundance and more distinct microbial community composition than previously estimated. This work provides a less biased solution for studying the metabolic functions of uncultivable hemolymph microbiota devoid of host hemocyte contamination.