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SPOTLIGHT

Articles of Significant Interest Selected from This Issue by the Editors

Proteomics Technology Identifies Potential Uropathogenic *Escherichia coli* Vaccine Targets

Urinary tract infections (UTIs) occur most often in otherwise healthy individuals and represent one of the most common bacterial infections for humans. Alteri and Mobley (p. 2679–2688) used state-of-the-art quantitative fluorescence difference gel electrophoresis to characterize the outer membrane proteome during growth in human urine for uropathogenic *Escherichia coli* (UPEC). They found that UPEC enriches its outer membrane with at least eight receptors for iron compounds during growth in this milieu. These findings may represent a key step toward developing a vaccine aimed at preventing UTIs by identifying UPEC surface protein targets likely expressed during growth in the urinary tract.

A Murine Model of Inhalational Anthrax

The availability of animal models is critical for advances in our understanding of *Bacillus anthracis* pathogenesis and in the development of new vaccines and therapeutics. The lethality of nontoxigenic, encapsulated strains of anthrax in mice and the failure of vaccines to protect mice after challenge with *B. anthracis* have led many researchers to question the usefulness of the murine model. Loving and coworkers (p. 2689–2698) describe disease progression, innate cytokine responses, and histological changes following aerosol challenge of complement-deficient mice with Sterne strain *B. anthracis* spores. The work provides an important validation of the murine model of anthrax and demonstrates that the model can be valuable for understanding *B. anthracis* pathogenesis, identifying components of the host immune system required for bacterial clearance, and screening new vaccines and postexposure therapeutics.

Transcutaneous Immunization against *Clostridium difficile*

A highly virulent strain of *Clostridium difficile* has emerged and has been associated with outbreaks of severe nosocomial diarrhea. Control measures to prevent *C. difficile*-associated diarrhea largely have failed. Immunity against the large Rho-modifying toxin A of *C. difficile* is protective in humans. Ghose et al. (p. 2826–2832) show in a mouse model that transcutaneous immunization induces systemic and mucosal antitoxin immune responses, including toxin-neutralizing antibodies, while parenteral immunization induces systemic responses. Induction of both systemic and mucosal responses may provide greater protection against *C. difficile*-associated disease than induction of systemic responses alone.