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An interdisciplinary team is investigating the mechanism of iron transport in pathogenic bacteria. In pathogenic *Neisseria* spp., iron transport from transferrin bound to surface receptors to the cytosol is facilitated in the periplasmic space by ferric binding protein (FbpA). This team has determined that iron transport may be controlled at this stage by a redox potential modulating anion (RPMA; e.g., phosphate or citrate). Depending on the RPMA bound, the FbpA iron affinity and ease of Fe(III/II) reduction significantly changes, representing a possible iron release mechanism to the cytosol for this bacterium. Since acquisition of the essential nutrient iron from the host is related to virulence, a fundamental understanding of iron transport in pathogenic bacteria may provide the basis for control of the disease.

The team consists of chemists from Duke University (A. L. Crumbliss (NSF PI), and graduate students S. Dhungana and C. H. Taboy (currently at the CDC), microbiologists from the Pitt School of Medicine (T. A. Mietzner, D. S. Anderson, and K. G. Vaughan) and a biochemist from the Einstein College of Medicine (P. Aisen). Recent results will be published in a special issue of the *Proceedings of the National Academy of Sciences* featuring Bioinorganic Chemistry in April, 2003: S. Dhungana, C. H. Taboy, D. S. Anderson, K. G. Vaughan, P. Aisen, T. A. Mietzner, and A. L. Crumbliss, "The Influence of the Synergistic Anion on Iron Chelation by Ferric Binding Protein, A Bacterial Transferrin" *Proc. Natl. Acad. Sci. (USA)*, April, 2003.

