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**Crystal Structure of the Aerobic FMN-Dependent Azoreductase (AzoA) from *Enterococcus faecalis*.** Z.-J. Liu<sup>1,2</sup>, H. Chen<sup>3</sup>, L. Chen<sup>1</sup>, S.L. Hopper<sup>3</sup>, C.E. Cerniglia<sup>3</sup>, Neil Shah<sup>2</sup>, J. P. Rose<sup>1</sup>, B.-C. Wang<sup>1</sup>, <sup>1</sup>Dept. of Biochemistry and Molecular Biology, Univ. of Georgia, Athens, GA 30605, USA, <sup>2</sup>National Laboratory of Biomacromolecules, Inst. of Biophysics, Chinese Academy of Sciences, Beijing 100101, China, <sup>3</sup>National Center for Toxicological Research/FDA, Jefferson, AR 72079, USA.

Azo dyes are a class of colorants used in tattooing, cosmetics, foods, and consumer products. In bacteria, azo dyes are mainly metabolized by azoreductases to colorless aromatic amines, some of which are carcinogenic. The crystal structure of AzoA from *E. faecalis* has been determined to 2.0 Å. AzoA has a broad spectrum of substrate specificity and is capable of degrading a wide variety of azo dyes. The structure was determined by single wavelength anomalous scattering from Se-Met labeled protein using the UGA Sca2Structure pipeline. The AzoA structure is a dimer with an FMN molecule bound to each monomer. The AzoA monomer shows the typical NAD(P)-binding Rossmann fold with the FMN cofactor lying on top of the C-terminal end of the central  $\beta$ -sheet, inside a positively charged pocket. The FMN phosphoribityl moiety is buried deeply within the protein while the FMN isoalloxazine ring remains partially accessible to the solvent.