

P032 Studies of the N-terminal soluble domains of CopA from *Bacillus subtilis*

Liang Zhou, Chloe Singleton, Nick E. Le Brun

School of Chemical Sciences and Pharmacy, University of East Anglia, Norwich NR4 7TJ, UK

To satisfy the need for the incorporation of copper into proteins essential for processes such as respiration and photosynthesis, and to counter the potential toxicity of the metal ion, organisms have evolved complex mechanisms for trafficking copper (as Cu(I)). These function to maintain Cu(I) in a tightly bound form, only releasing it through a specific facile interaction with target proteins, which are either copper-requiring enzymes or copper transporters.

In the Gram-positive bacterium *Bacillus subtilis*, CopZ and CopA, a copper chaperone and P-type ATPase, respectively, constitute a copper efflux system that protects the cell against copper toxicity. Significant structural and mechanistic information is now available for these proteins and it has been demonstrated that CopZ and the N-terminal part of CopA specifically interact.

Here we report the expression and purification of both soluble domains in isolation and spectroscopic, thermodynamic and kinetic studies of Cu(I) binding to the second soluble domain protein CopAb. The results are discussed in terms of the Cu(I)-binding behaviour of the CopAab protein containing both soluble domains.