

P030 Mechanistic studies of iron release from *Escherichia coli* bacterioferritin

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Ferritins are iron storage proteins composed of 24 subunits, which associate to form a sphere-like particle in which iron is stored as an inorganic iron(III) oxyhydroxide mineral. Ferritins are believed to serve as reservoirs from which iron can be mobilised when required for cellular anabolic activity. While significant mechanistic details are now available for iron mineralisation in ferritins, relatively little is known about how iron is released. In order for this to occur, it is known that iron must be reduced from the +3 to the labile +2 state, upon which it becomes accessible to chelators. Bacterioferritins constitute a sub-class of ferritins. They are distinct because, in addition to a non-typical ferritin catalytic ferroxidase centre in each subunit, they contain up to 12 heme groups. Thus far, a role for the heme groups has not been established as they can be removed with apparently no effect on the protein's capacity to store iron. One possibility is that the heme is involved in iron release. Here, we report studies of iron release from bacterioferritin using a range of reductants and chelators.