

## SUPPORTING INFORMATION

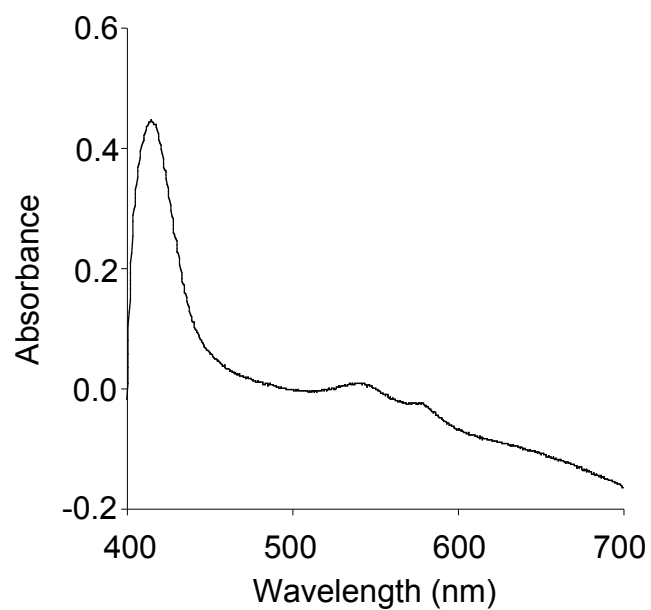


FIGURE S1: Absorbance spectrum of Ctb expressed *in vivo* in *E. coli*. Strain RKP4979 was grown in 50 ml cultures, the cells were resuspended in a small volume of 50 mM Tris HCl pH 7.0 and suspension scanned against a buffer baseline.

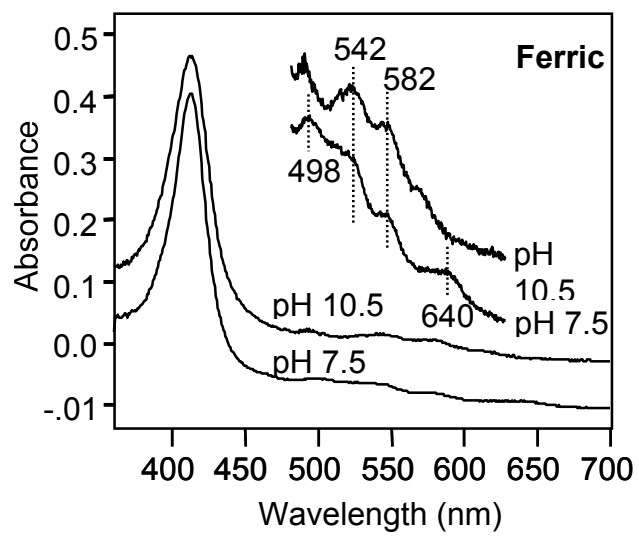


FIGURE S2: Optical absorption spectra of the ferric protein at pH 7.5 and 10.5.

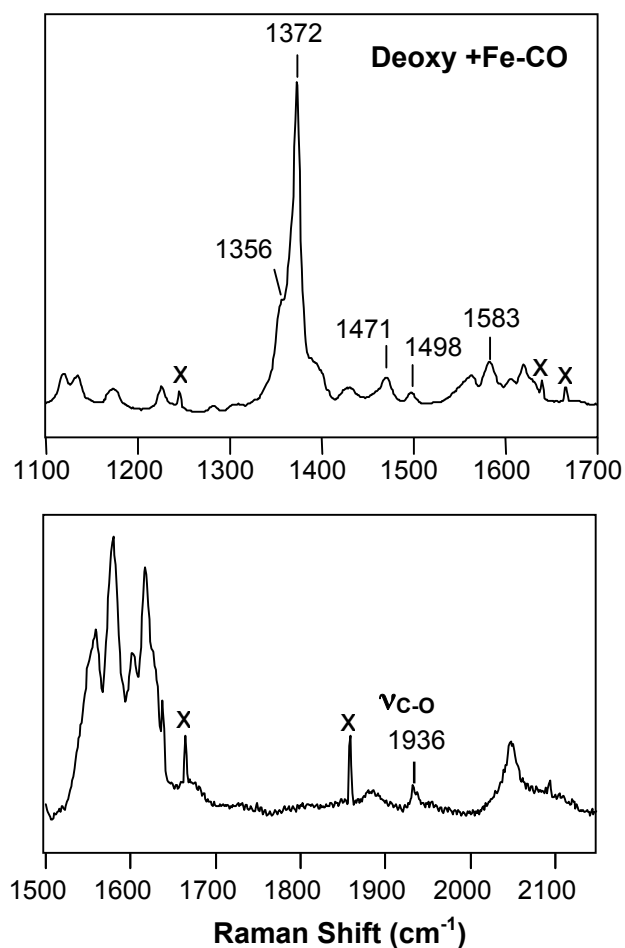


FIGURE S3: Top: The 1100-1700 cm<sup>-1</sup> region of the resonance Raman spectrum of the partially photodissociated CO-bound derivative, showing the Raman bands of the deoxy species at 1356 and 1471 cm<sup>-1</sup> and those of the CO-bound species at 1372, 1498 and 1583 cm<sup>-1</sup>. Bottom: The 1500-2140 cm<sup>-1</sup> region of the resonance Raman spectrum of the partially photodissociated CO-bound derivative. The C-O stretching mode is as indicated. The lines labelled as "x" are laser plasma lines.