



Supplementary Figure 1. UV-Visible Spectra of the Resting State LmP and Oxy-Ferryl Compound I. A) Resting state or native spectra of wild type LmP exhibits Soret maxima at 408 nm. Upon equimolar addition of hydrogen peroxide Compound I is formed and the Soret maxima shifts to 418 nm. After 30 min at room temperature, the oxy-ferryl species has not decayed significantly; illustrating that the decrease observed in EPR spectroscopy is dependent upon the cation radical decay and not the oxy-ferryl intermediate decay. B) LmP C197T. C) LmP W208F.