Supporting Information

Human Manganese Superoxide Dismutase Tyrosine 34 Contribution to Structure and Catalysis

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Contents: Three pages total containing a figure of the rate of change of absorbance upon introduction of superoxide to Y34N and Y34F human MnSOD, and a figure of extinction coefficients at different wavelengths for Y34A human MnSOD.

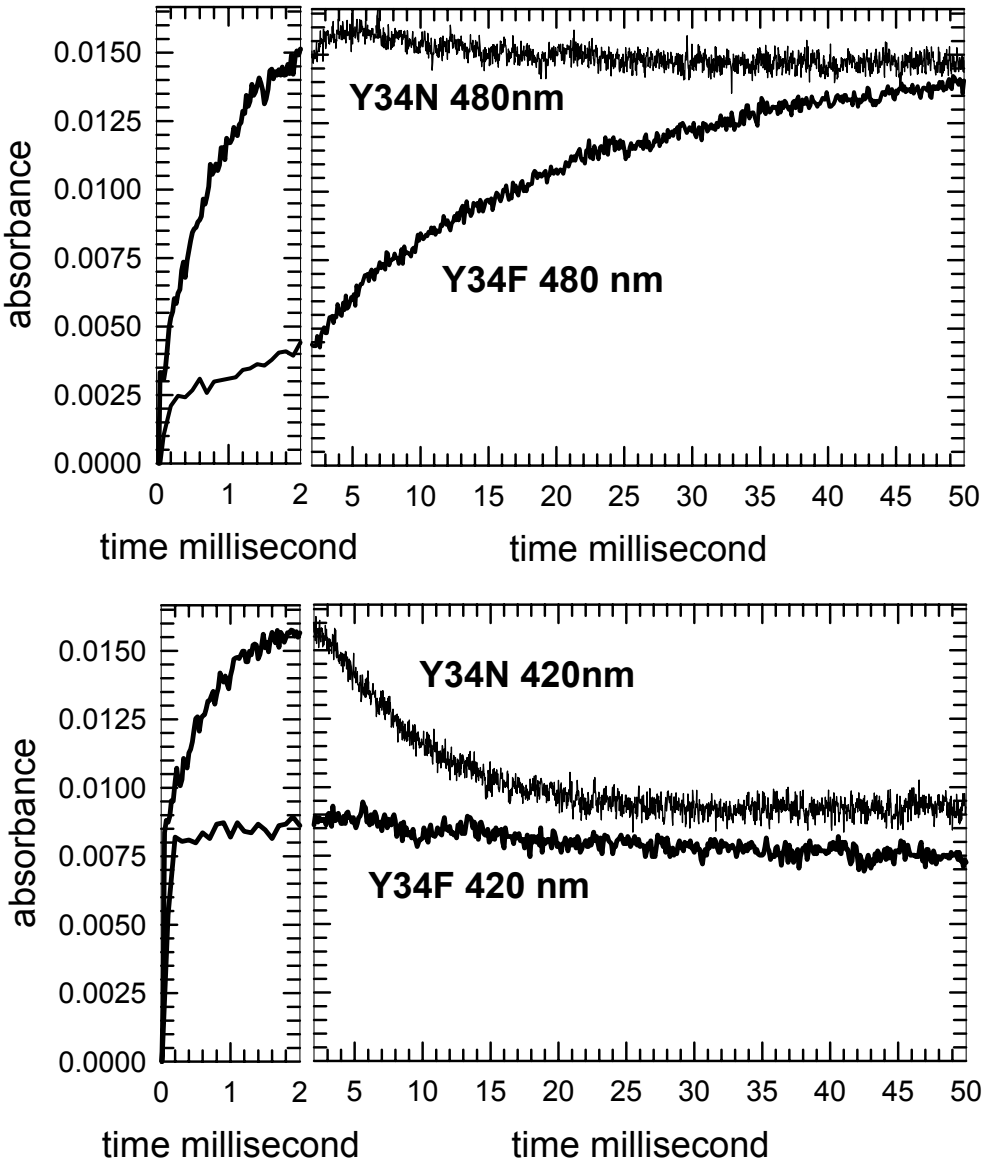

Figure S1. The increase in absorbance (*top*) at 480 nm of 182 μM Y34N MnSOD and 170 μM Y34F MnSOD and (*bottom*) at 420 nm after pulse radiolysis generated superoxide. Solutions contained 30 mM formate, 50 μM EDTA, and 2 mM Mops at pH 7.4 for Y34F and pH 7.1 for Y34N. The enzymes had been reduced prior to the experiment with H_2O_2.

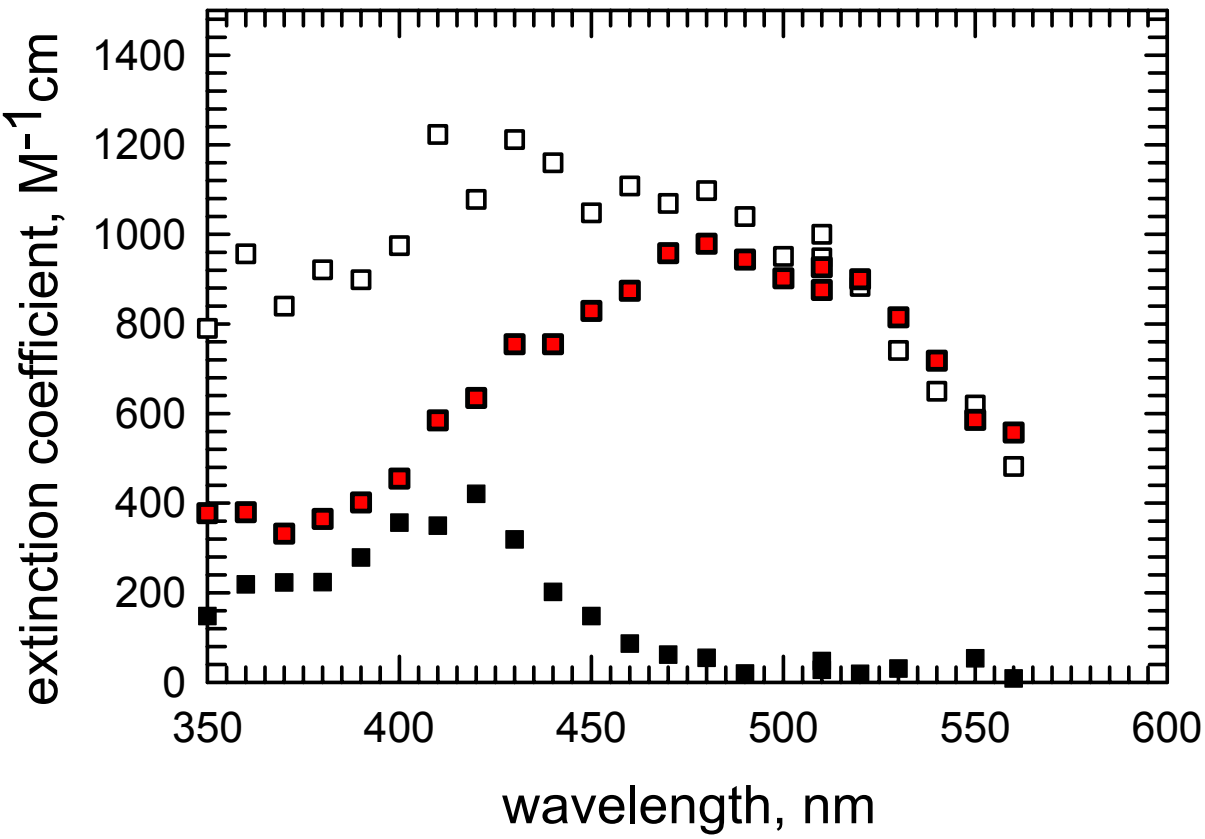

Figure S2. Molar extinction coefficient ($M^{-1}cm^{-1}$) observed after pulse radiolysis of a solution of Y34A MnSOD (120 μM) pre-reduced with H_2O_2. (Red squares) spectrum of Mn^{3+}(OH)SOD obtained by extrapolating to long times as in Figure 2A; (black squares) spectrum of the product-inhibited complex obtained by extrapolating the initial increase (t # 0.2 ms) as in Figure 2A; (open squares) spectrum of a newly-detected intermediate obtained by extrapolating the second kinetic process at times near 2 ms as in Figure 2B. Conditions were as described in Figure 2.