

Supporting Information

Kinetics and mechanism of the $[\text{Ru}^{\text{III}}(\text{edta})(\text{H}_2\text{O})]^-$ -mediated oxidation of cysteine by H_2O_2

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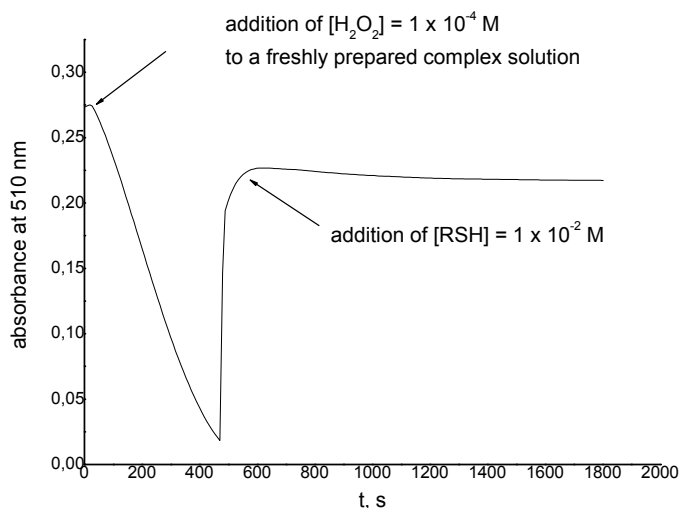


Figure S1. Reformation of $[\text{Ru}^{\text{III}}(\text{edta})(\text{SR})]^{2-}$ on addition of an excess cysteine to the solution following the oxidation of $[\text{Ru}^{\text{III}}(\text{edta})(\text{SR})]^{2-}$ by H_2O_2 . Experimental conditions: $[\mathbf{1}] = 1 \times 10^{-4} \text{ M}$, $[\text{RSH}] = 1 \times 10^{-4} \text{ M}$, $[\text{H}_2\text{O}_2] = 1 \times 10^{-4} \text{ M}$, pH 5.1 (1 mM acetate buffer), temp. 20 °C.

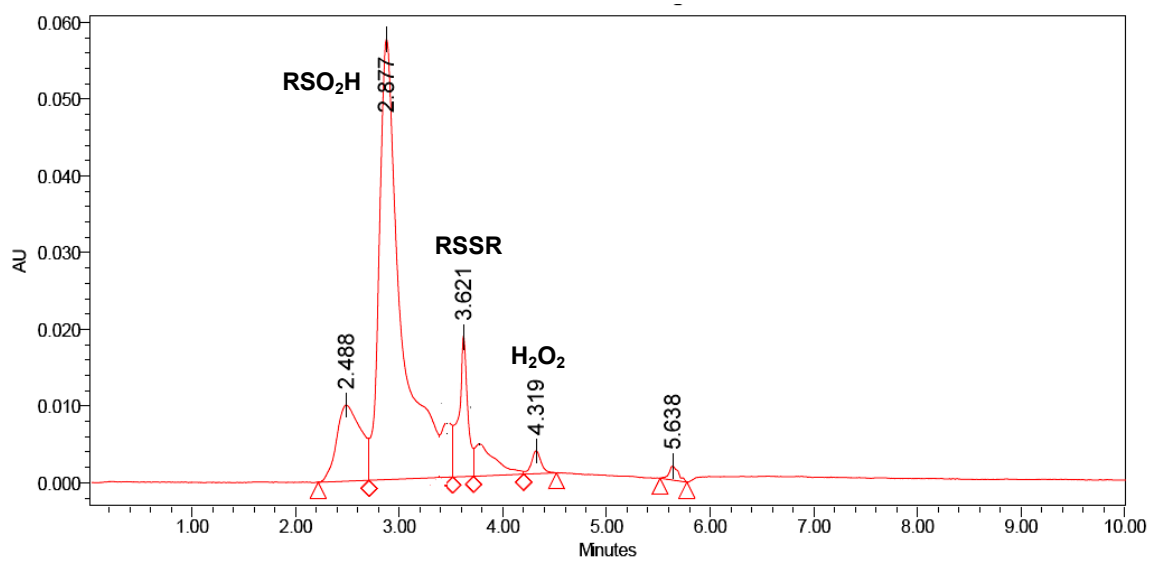


Figure S2. Results of HPLC product analysis for the oxidation of RSH by H₂O₂ in the presence of [Ru^{III}(edta)(H₂O)]⁻. Experimental conditions: [1] = 1 x 10⁻⁴ M, [RSH] = 1 x 10⁻⁴ M and [H₂O₂] = 1 x 10⁻² M.

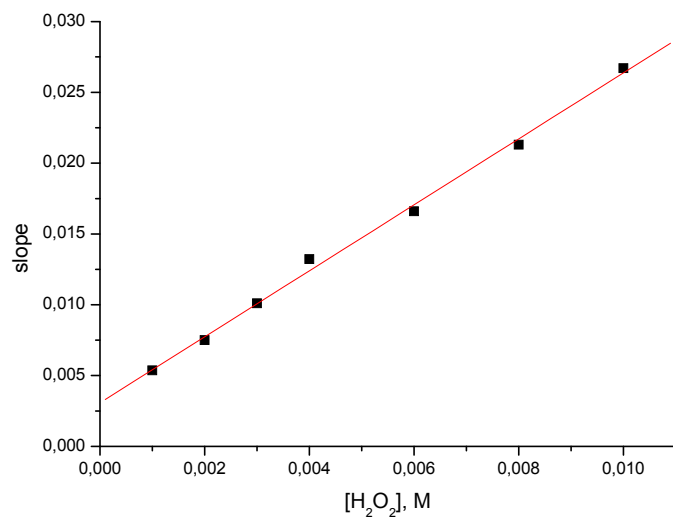


Figure S3. Maximum slope of the kinetic traces reported in Figure 3 as a function of H₂O₂ concentration. Experimental conditions: see Figure 3.

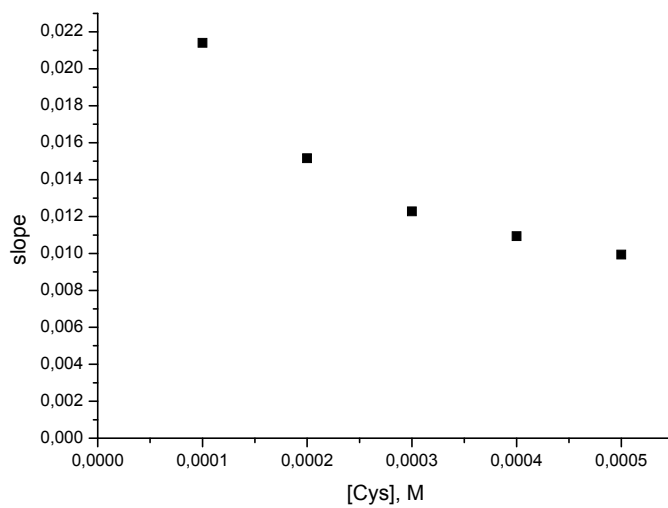


Figure S4. Maximum slope of the absorbance-time traces in Figure 5 as a function of [cysteine] for the reaction of $[\text{Ru}^{\text{III}}(\text{edta})(\text{SR})]^{2-}$ with H_2O_2 . Experimental conditions: see Figure 5.

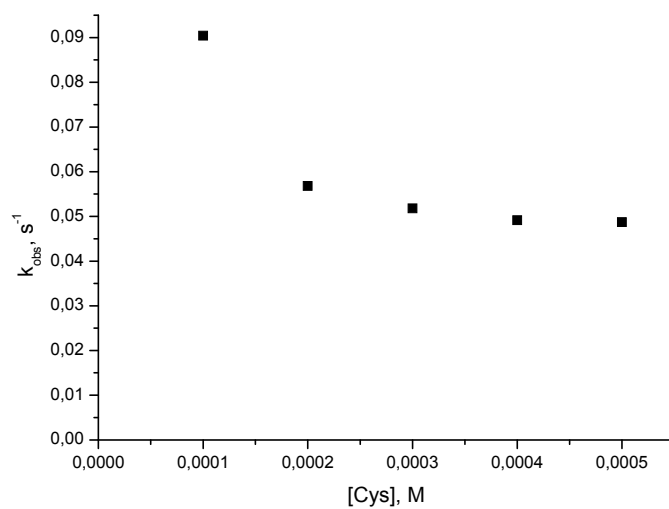


Figure S5. k_{obs} as a function of [cysteine] for the reaction of $[\text{Ru}^{\text{III}}(\text{edta})(\text{SR})]^{2-}$ with H_2O_2 .
Experimental conditions: see Figure 5.