

Electronic Supplementary Information (ESI)

Nitrite reduction mediated by Ru^{III}(edta) complex

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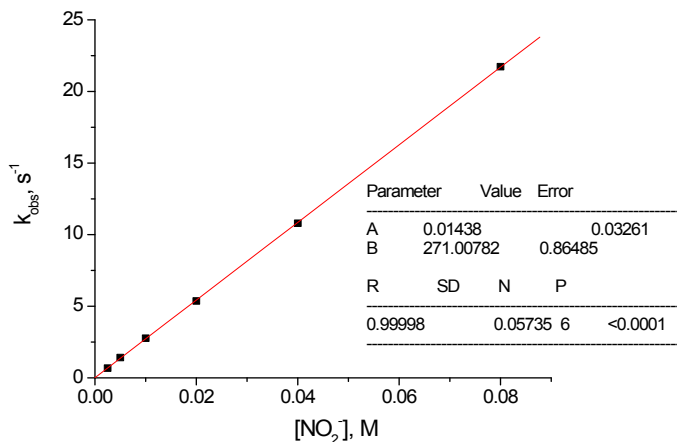


Fig. S1 Plot of k_{obs} versus $[\text{NO}_2^-]$ for the formation of $[\text{Ru}^{\text{III}}(\text{edta})(\text{NO}_2)]^{2-}$ in the reaction of $[\text{Ru}^{\text{III}}(\text{edta})(\text{H}_2\text{O})]^-$ with NO_2^- at 25 °C, pH = 4.5, $[\text{Ru}^{\text{III}}] = 2 \times 10^{-4}$ M

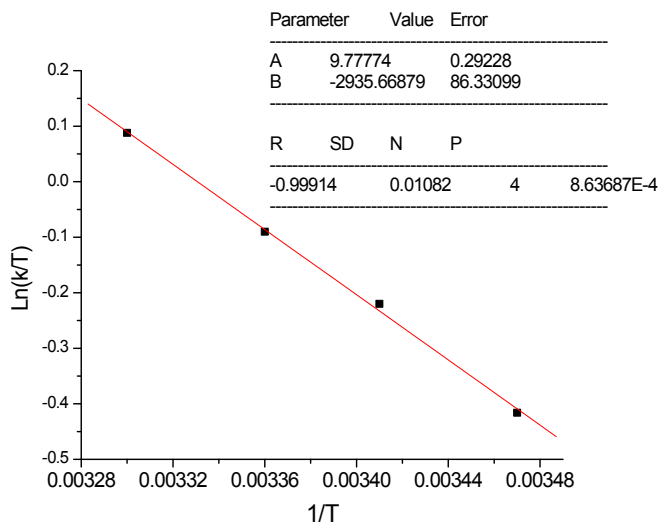


Fig. S2 Eyring plot for the formation of $[\text{Ru}^{\text{III}}(\text{edta})(\text{NO}_2)]^{2-}$ in the reaction of $[\text{Ru}^{\text{III}}(\text{edta})(\text{H}_2\text{O})]^-$ with NO_2^- at 25 °C, pH = 4.5, $[\text{Ru}^{\text{III}}] = 2 \times 10^{-4}$ M

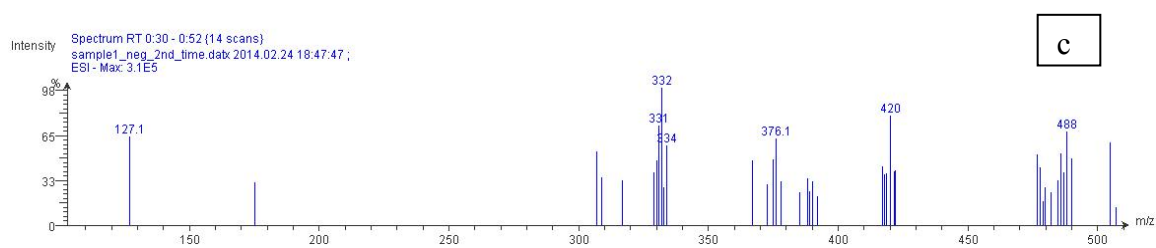
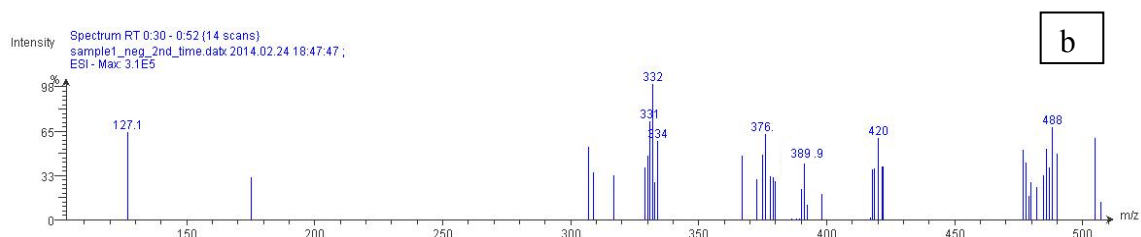
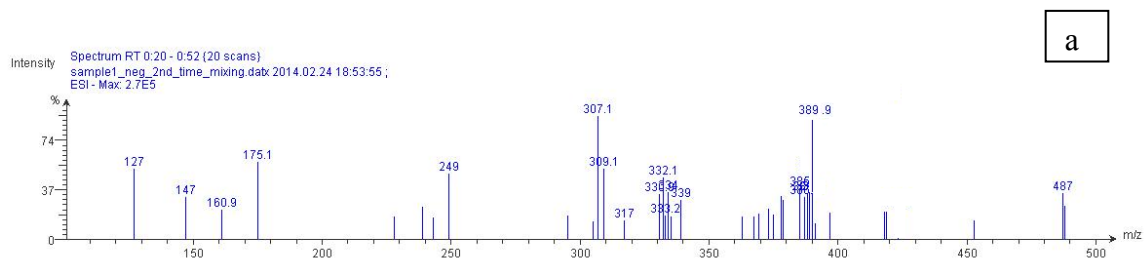


Fig. S3 Summary of ESI-MS data: a) Spectrum recorded for the solution of $[\text{Ru}^{\text{III}}(\text{edta})\text{H}_2\text{O}]^-$ (2×10^{-4} M) containing nitrite ion (2×10^{-3} M) in 0.01M acetate buffer at pH = 4.5; b) Spectrum recorded after 15 min; c) Spectrum recorded after 90 min of reaction.

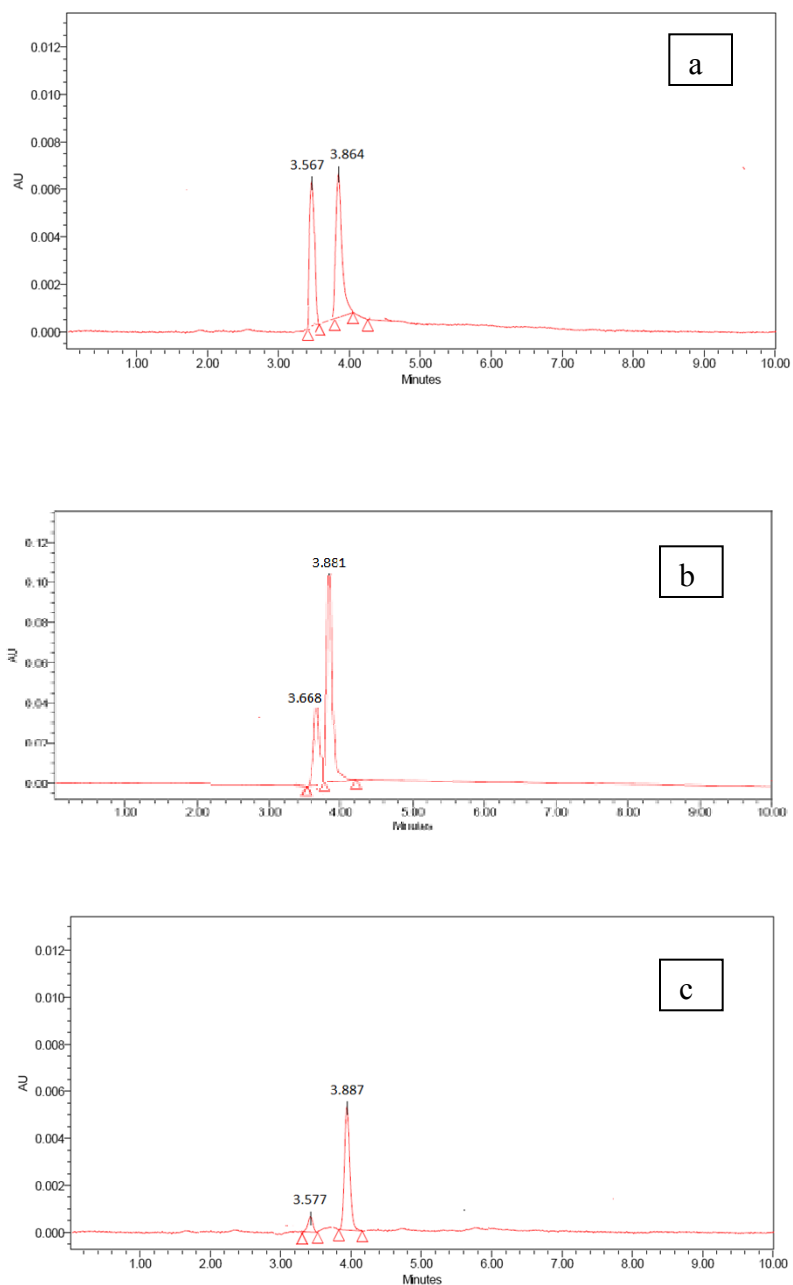


Fig. S4 HPLC of (a) Solution mixture containing authentic samples of cysteine and cystine, (b) resultant solution that obtained after addition of cysteine to a solution of $[\text{Ru}^{\text{III}}(\text{edta})(\text{NO}_2)]^{2-}$ at pH 6.5 and (c) resultant solution that obtained after addition of cysteine to a solution of $[\text{Ru}^{\text{III}}(\text{edta})(\text{NO}_2)]^{2-}$ and dimedone (2×10^{-3} M) at pH 6.5 . Experimental conditions as under Figure 5.

RT of cystine (CysSSCys) and cysteine (CySH) are 3.6 and 3.8, respectively.

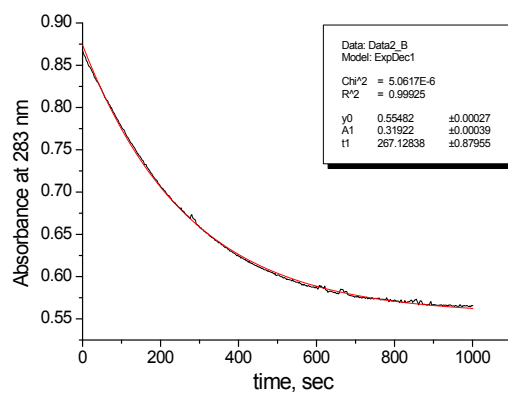


Fig. S5 Time versus absorption (at 283 nm) trace recorded for the reaction of $[\text{Ru}^{\text{III}}(\text{edta})(\text{NO}_2)]^{2-}$ (prepared by reacting $[\text{Ru}^{\text{III}}(\text{edta})]$ complex with NO_2^-) at pH 6.5 (0.01M phosphate buffer) with glutathione. $[\text{Ru}^{\text{III}}] = 2 \times 10^{-4} \text{ M}$; $[\text{NO}_2^-] = 2 \times 10^{-3} \text{ M}$, $[\text{Glutathione}] = 2 \times 10^{-3} \text{ M}$.