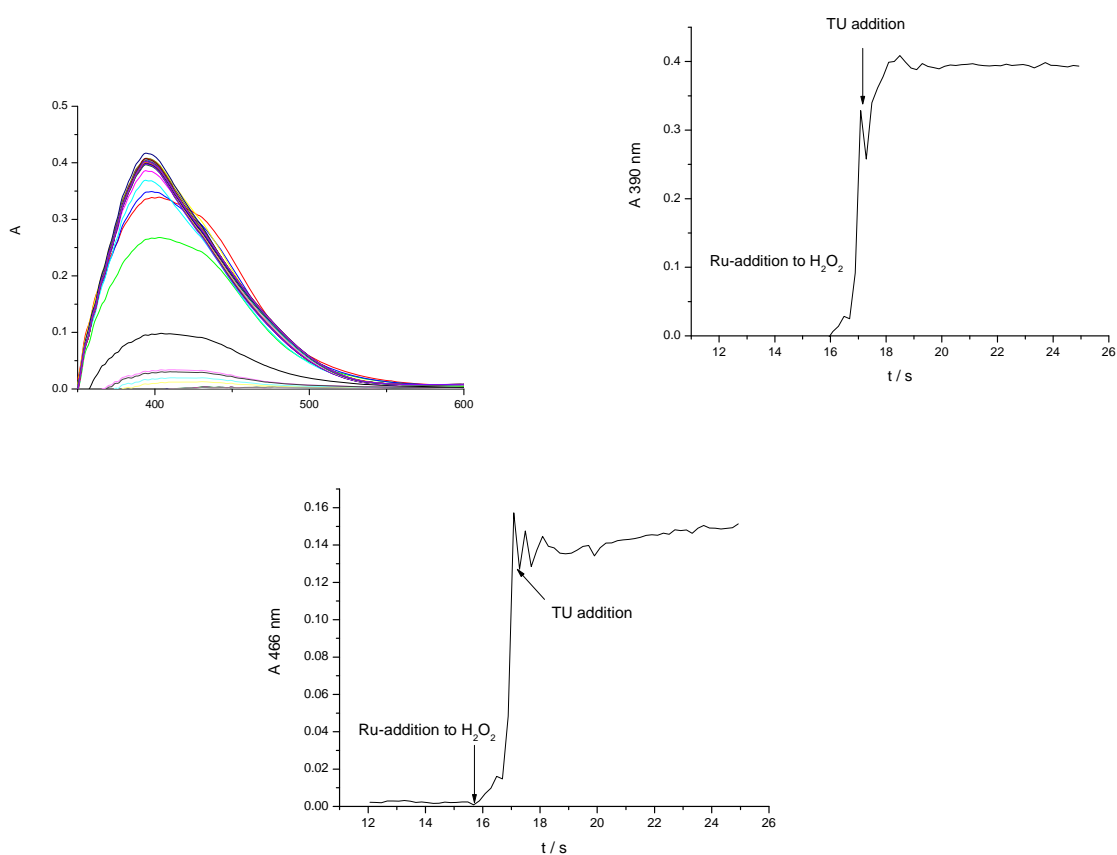


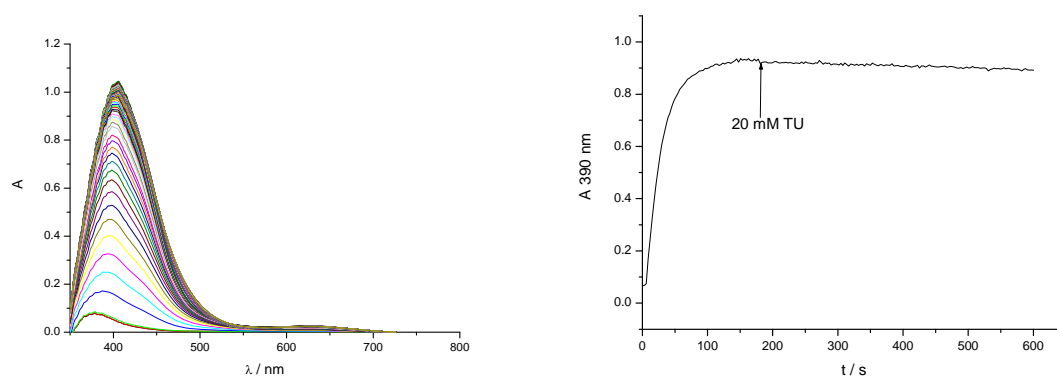
## Electronic Supporting Information

### Selective oxidation of thiourea with H<sub>2</sub>O<sub>2</sub> catalyzed by [Ru<sup>III</sup>(edta)(H<sub>2</sub>O)]<sup>-</sup>: Kinetic and mechanistic studies

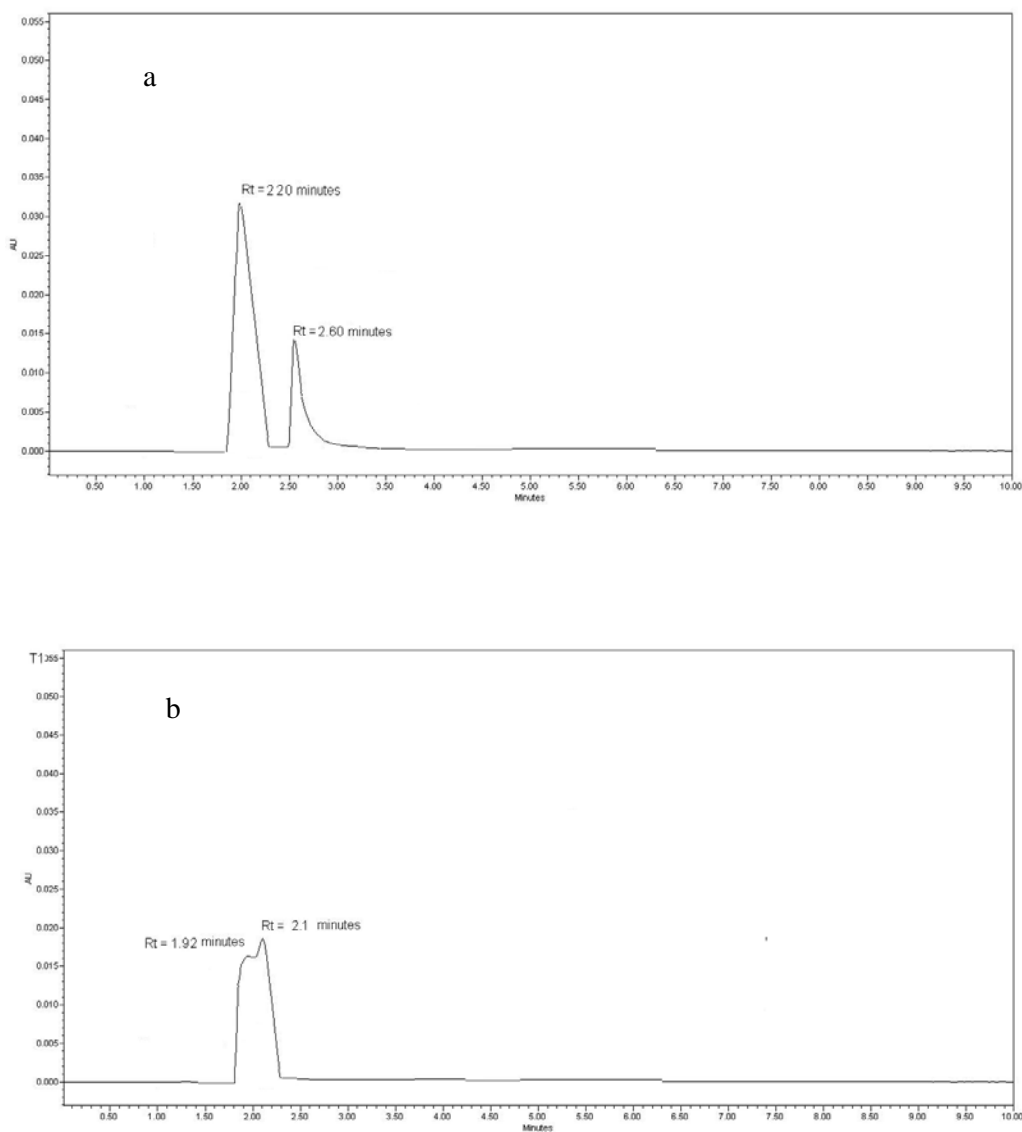
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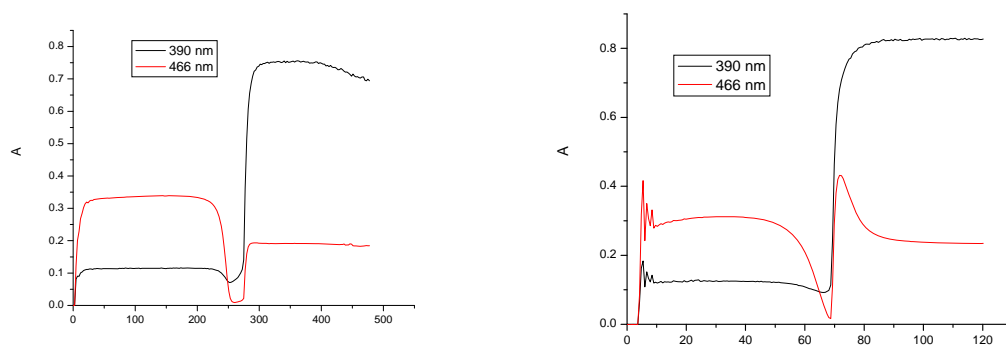
**Figure S1.** Reactivity of Compound 0, [Ru<sup>III</sup>(edta)(OOH)]<sup>2-</sup>, towards TU. [Ru<sup>III</sup>(edta)] = 0.1 mM, [H<sub>2</sub>O<sub>2</sub>] = 20 mM at pH 3.9 (2 mM acetate buffer) and 25 °C. TU (40 mM) was added after 2 sec.



**Figure S2.** Reactivity of Compound I,  $[\text{Ru}^{\text{V}}(\text{edta})\text{O}]^-$ , towards TU.  $[\text{Ru}^{\text{III}}(\text{edta})] = 0.1 \text{ mM}$ ,  $[\text{H}_2\text{O}_2] = 0.2 \text{ mM}$  at pH 3.9 (2 mM acetate buffer) and  $25 \text{ }^\circ\text{C}$ . TU (40 mM) was added after 2 min.



**Figure S3.** Results of HPLC studies for the oxidation of TU by the Ru(edta)/H<sub>2</sub>O<sub>2</sub> system. (a) Reaction mixture was analyzed just after disappearance of the red colour (after 800 sec) and b) after 1 h. [Ru(edta)(H<sub>2</sub>O)] = 2 × 10<sup>-4</sup> M, [TU] = 2 × 10<sup>-3</sup> M, [H<sub>2</sub>O<sub>2</sub>] = 2 × 10<sup>-2</sup> M, pH = 4.8 adjusted by (NaOH/HCl).



**Figure S4.** Kinetic traces recorded during oxidation of TU by the Ru(edta)/H<sub>2</sub>O<sub>2</sub> system at (a) pH = 1.6 and (b) pH = 9.2. [Ru(edta)] = 0.2 mM, [TU] = 0.4 mM, [H<sub>2</sub>O<sub>2</sub>] = 20 mM.