Electronic Supporting Informations

Kinetics and mechanism of NO production in the [Ru^{III}(edta)(H$_2$O)]$^-$ mediated oxidation of L-arginine with H$_2$O$_2$

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SI 1.   Rate data for the reaction of [Ru^{III}(edta)(OH)]$^{2-}$ with Arg as a function of [Arg] at 17.1 °C

[Arg]	k_{obs}, s^{-1}	k_f, M^{-1}s^{-1}	k_r, s^{-1}
1 x 10^{-3} M	0.0113		
2 x 10^{-3} M	0.0196		
3 x 10^{-3} M	0.0264	7.7 ± 0.2	0.0036 ± 0.00055
4 x 10^{-3} M	0.0342		
5 x 10^{-3} M	0.0428		

SI 2.   Rate data for the reaction of [Ru^{III}(edta)(OH)]$^{2-}$ with Arg as a function of [Arg] at 24.7 °C

[Arg]	k_{obs}, s^{-1}	k_f, M^{-1}s^{-1}	k_r, s^{-1}
1 x 10^{-3} M	0.0127		
2 x 10^{-3} M	0.0222		
3 x 10^{-3} M	0.0328	10.4 ± 0.3	0.002 ± 0.0005
4 x 10^{-3} M	0.0422		
5 x 10^{-3} M	0.0546		

SI 3.   Rate data for the reaction of [Ru^{III}(edta)(OH)]$^{2-}$ with Arg as a function of [Arg] at 30.1 °C

[Arg]	k_{obs}, s^{-1}	k_f, M^{-1}s^{-1}	k_r, s^{-1}
1 x 10^{-3} M	0.0181		
2 x 10^{-3} M	0.0292		
3 x 10^{-3} M	0.0438	13.8 ± 0.5	0.0028 ± 0.00156
4 x 10^{-3} M	0.0572		
5 x 10^{-3} M	0.0733		

SI 4.   Rate data for the reaction of [Ru^{III}(edta)(OH)]$^{2-}$ with Arg as a function of [Arg] at 35.0 °C

[Arg]	k_{obs}, s^{-1}	k_f, M^{-1}s^{-1}	k_r, s^{-1}
1 x 10^{-3} M	0.0205		
2 x 10^{-3} M	0.042		
3 x 10^{-3} M	0.0578	19.1 ± 0.5	0.0031 ± 0.00156
4 x 10^{-3} M	0.0782		
5 x 10^{-3} M	0.0981		

SI 5.   Plot of k_{obs} vs. [Arg] at four different temperatures for the reaction of $[Ru^{III}(edta)(OH)]^{2-}$ with Arg as a function of [Arg]. $[Ru^{III}(edta)(H_2O)]^{2-} = 1 \times 10^{-4}$ M, pH = 9.1 (phosphate buffer)
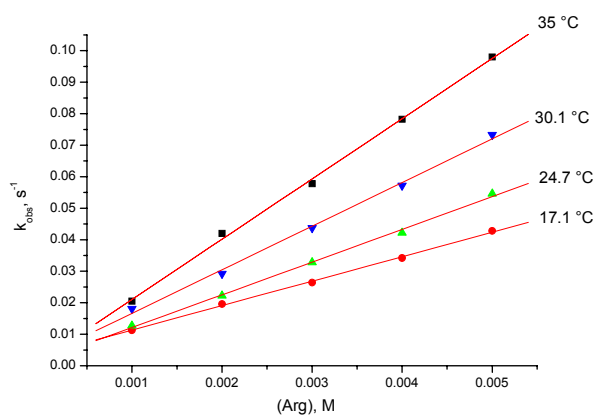
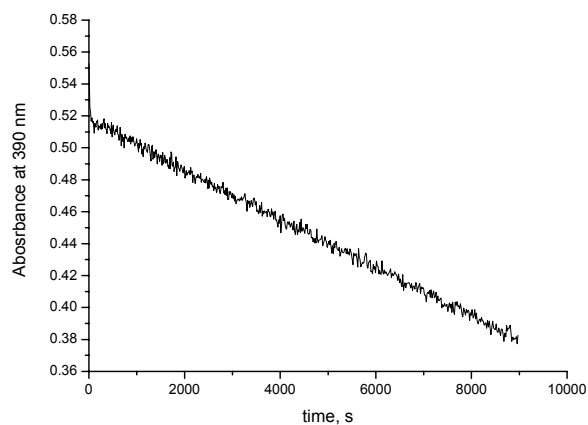
SI 6.   Eyring plot **($\ln(k_f/T)$ *vs.* 1/T)** for determination of activation parameters for the reaction of $[Ru^{III}(edta)(OH)]^{2-}$ with Arg at pH = 9.1

A	12,36292	0,8487
B	-4673,81577	254,19189

R	SD	N	P
-0,99706	0,03781	4	0,00294
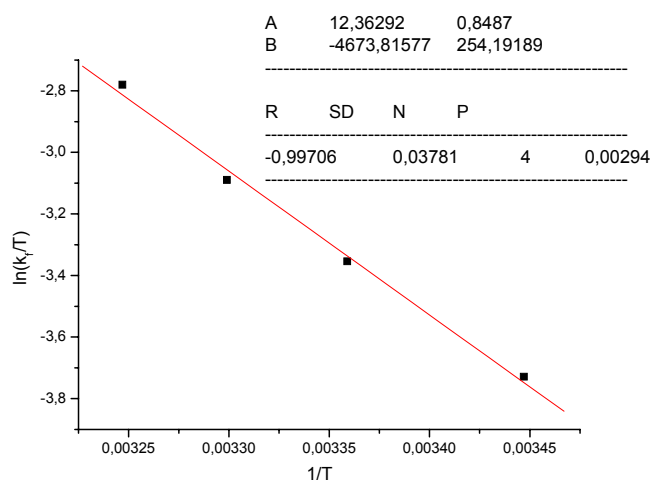
$\Delta H^{\neq} = 39 \pm 2$ kJ.mole^{-1} , $\Delta S^{\neq} = -128 \pm 6$ J.deg^{-1}.mole^{-1}

SI 7.   Time *vs.* absorbance (at 390 nm) plot for the decomposition of [Ru(edta)O]$^-$ at pH 9.1
(0.1 M phosphate buffer). [Ru^{III}(edta)(OH)]$^{2-}$ = 1 x 10^{-4} M, [H$_2$O$_2$] = 5 x 10^{-4} M

SI 8.   Plot of k´$_{obs}$ vs. [Arg] for the oxidation of L-arginine by [Ru^V(edta)(O)]$^-$ at 35 °C and pH
= 9.1. [Ru^{III}(edta)(OH)]$^{2-}$ = 1 x 10^{-4} M, [H$_2$O$_2$] = 5 x 10^{-4} M