Electronic Supplementary Information for Dalton Transactions

Supplementary Information

for

Kinetics and Mechanism of the Reaction of Cr(II) Aqua Ions with Benzoylpyridine N-oxide

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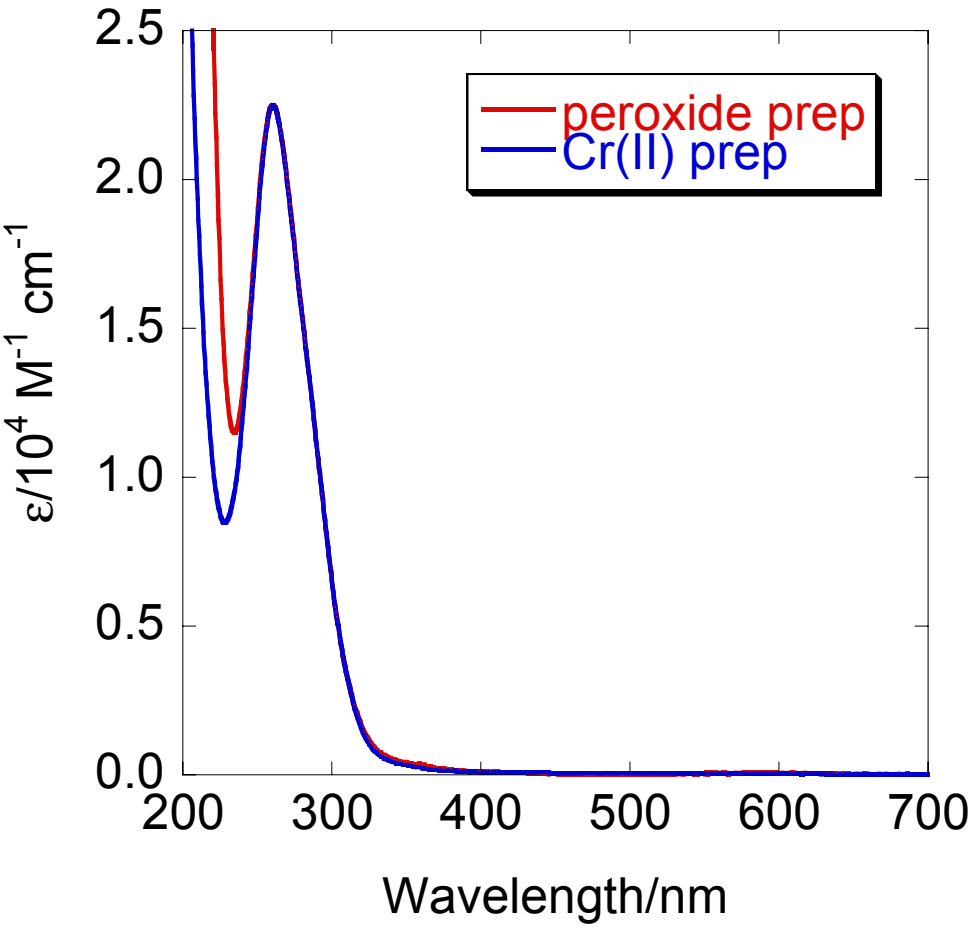


Figure S1. UV visible spectra of the $Cr(H_2O)_5(BPO)^{3+}$ prepared by the peroxide method (red, in 0.10 M $HClO_4$) and by Cr_{aq}^{2+}/BPO method (blue, in 1.5 M $HClO_4$). Both spectra were run against the background of 0.10 M $HClO_4$. The increase in absorbance at <230 nm in the red spectrum represents the contribution from 1.5 M $HClO_4$.

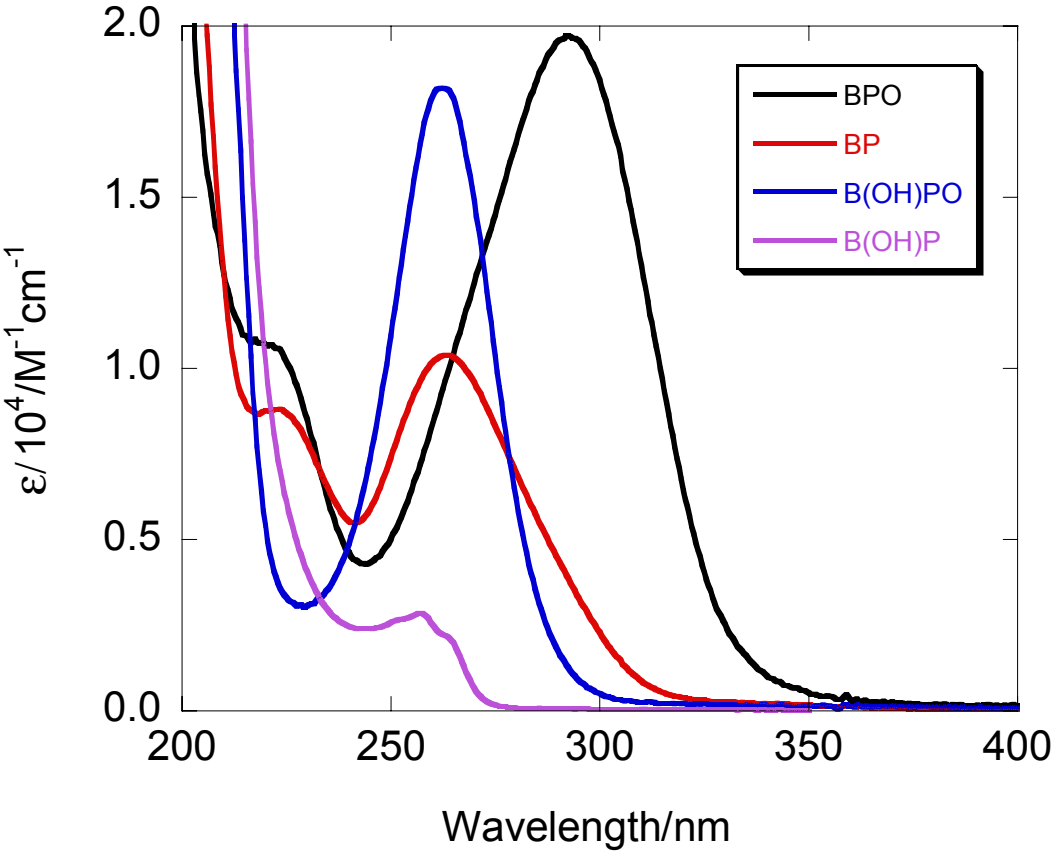
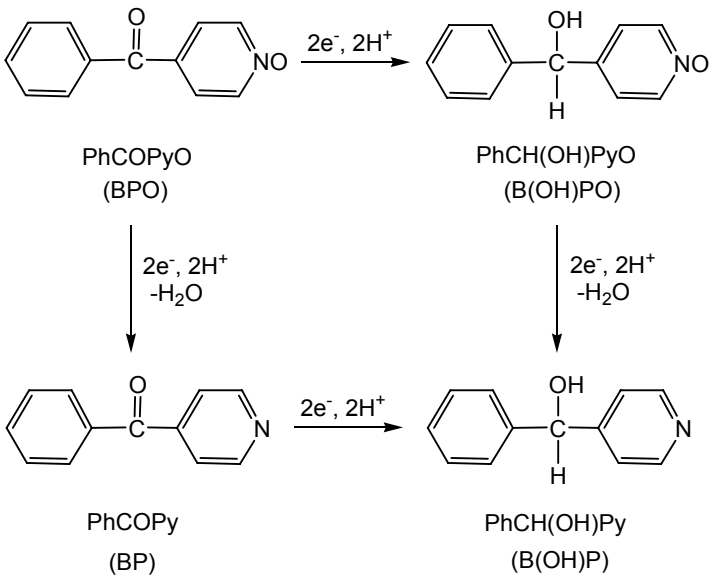


Figure S2. UV spectra of BPO and the three reduction products. For structures see Chart 1 (reproduced below)



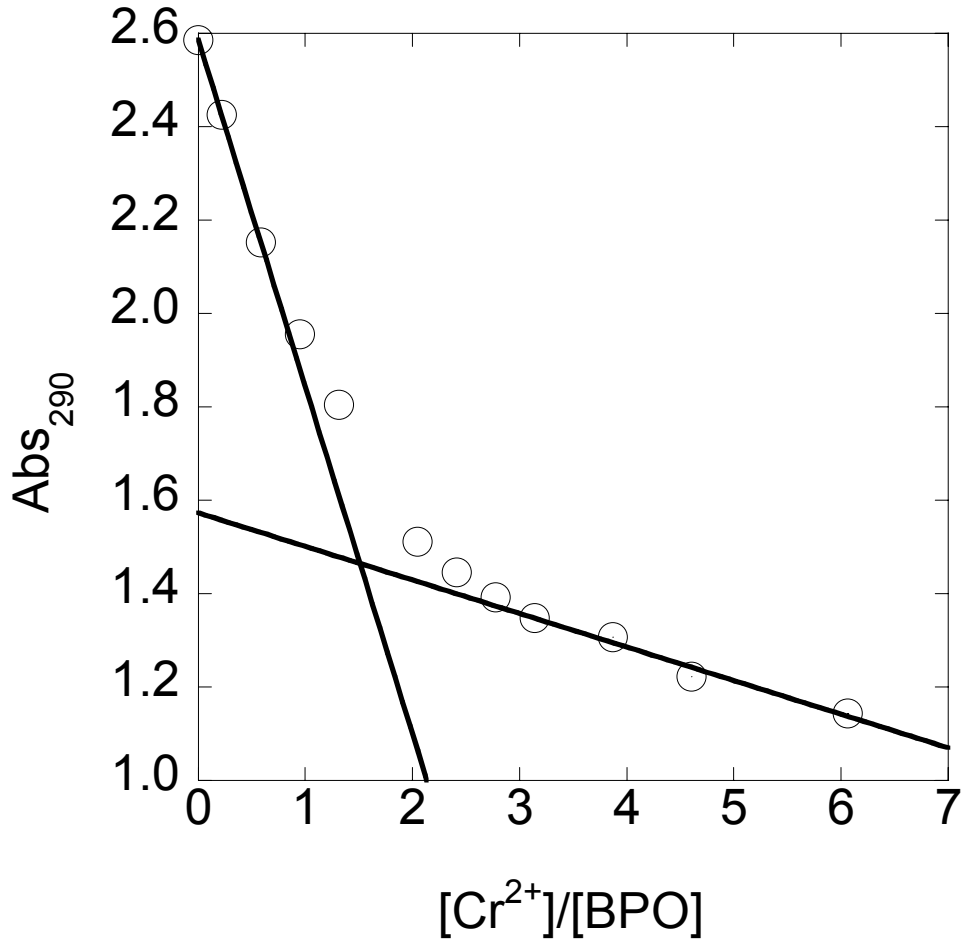


Figure S3. Spectrophotometric titration of 0.136 mM BPO with Cr_{aq}^{2+} at 292 nm

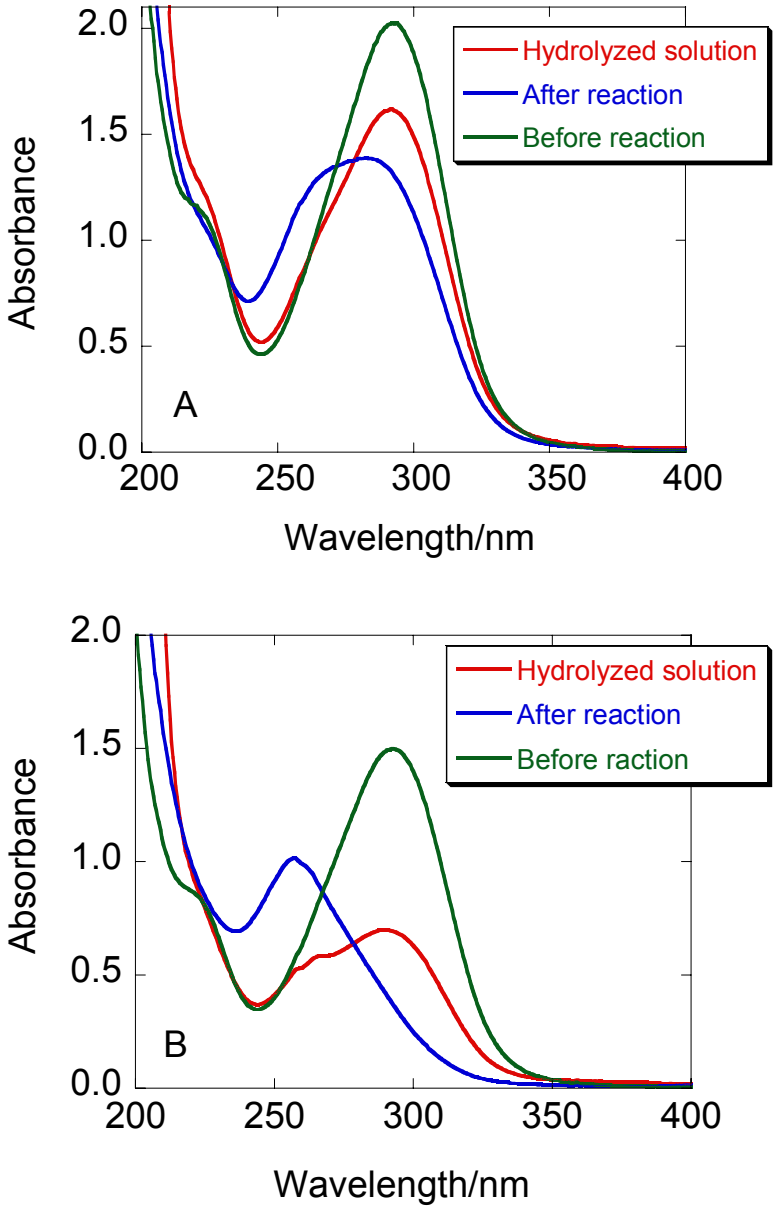


Figure S4. UV spectra before and after the Cr_{aq}^{2+}/BPO reaction in 0.10 M $HClO_4$, and after hydrolysis of the Cr-products. Initial concentrations: 0.10 mM Cr^{2+} + 0.10 mM BPO (**A**); 0.50 mM Cr^{2+} + 0.070 mM BPO (**B**)

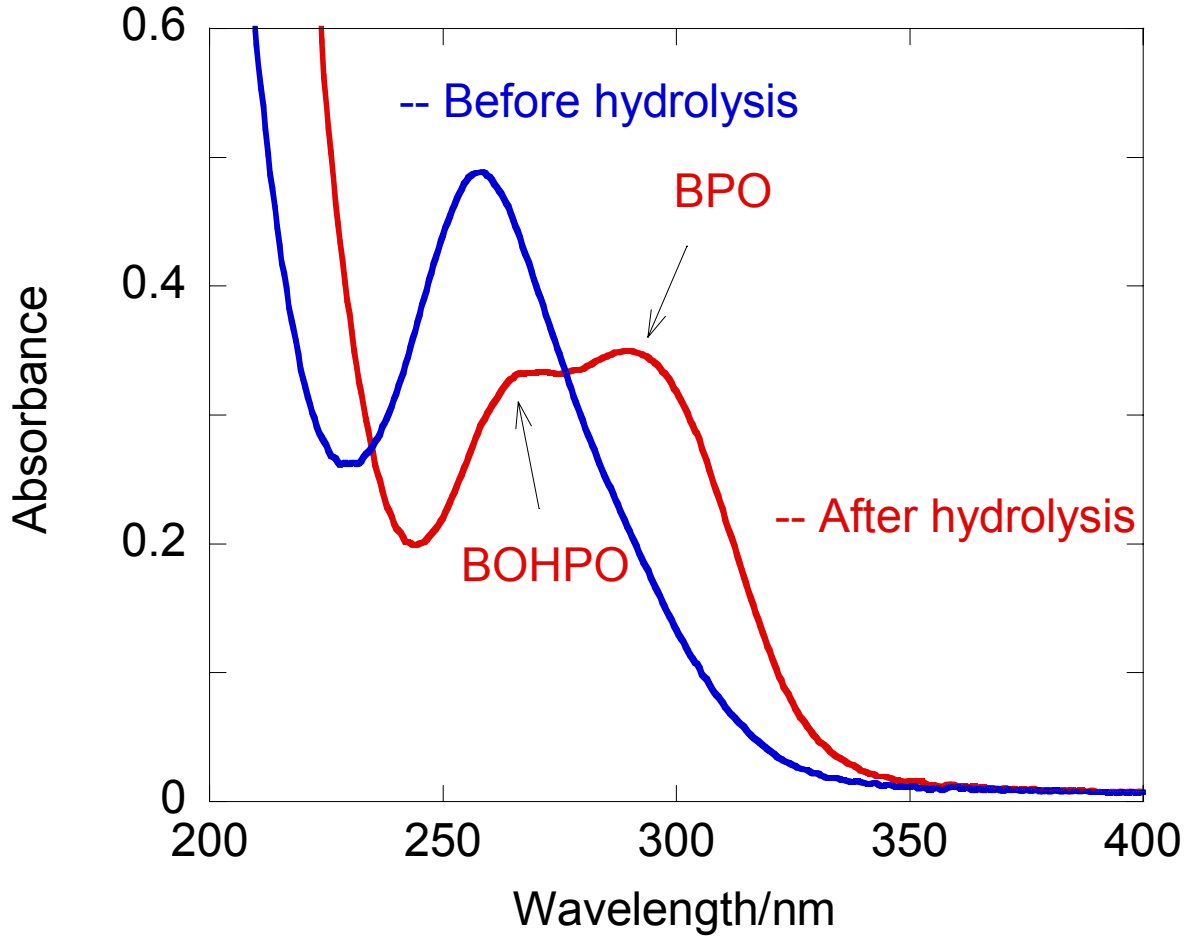


Figure S5. UV spectra of a late fraction of $(H_2O)_5Cr(BPO)^{3+}$ eluted from Sephadex C-25 (blue) and after hydrolysis (red). The preparation had the initial ratio $[Cr^{2+}]/[BPO] = 2:1$ in 0.10 M $HClO_4$.

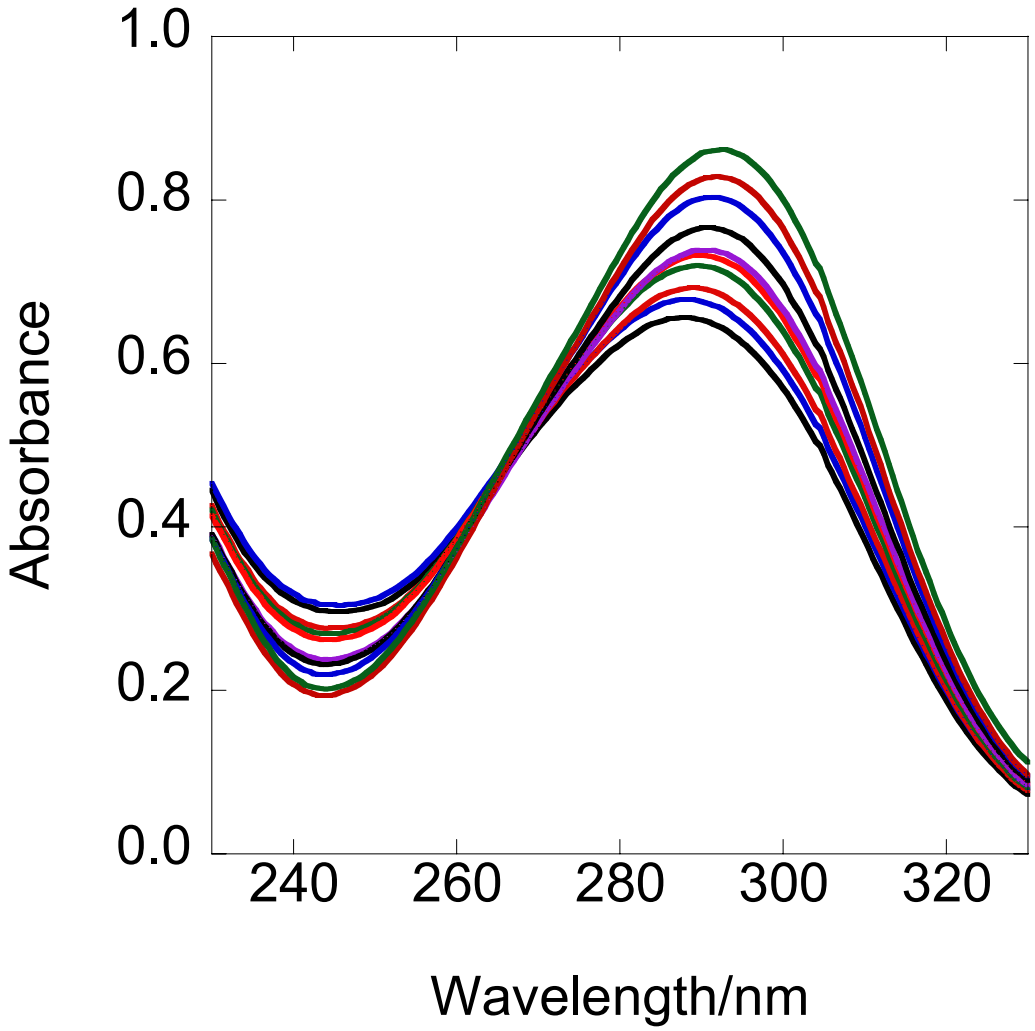


Figure S6. UV spectra of 4.2×10^{-5} M BPO at different acid concentrations. The absorbance at 292 nm decreases as $[H^+]$ increases from 10^{-7} M (top green spectrum) to 1.0 M (bottom black spectrum). The eight spectra between these two limits are for $[H^+]$/M = 0.10, 0.20, 0.30, 0.40, 0.50, 0.60, 0.80, and 0.90.