Iron(III) Oxidation of Carboxylic Acids and Phenols as Models for the Abiotic Transformation of Natural Organic Matter

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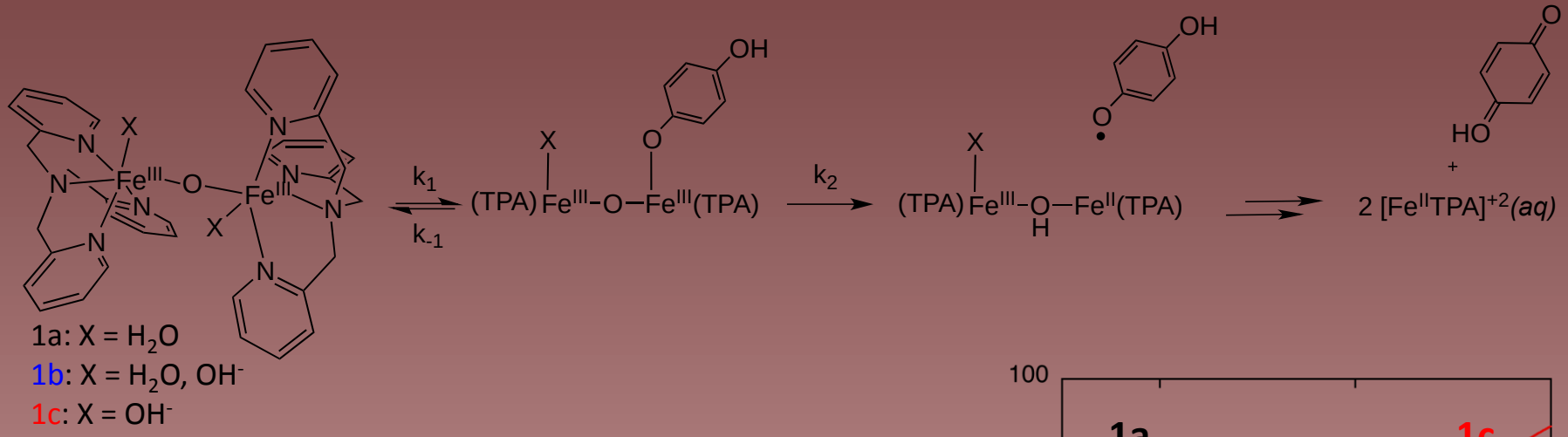

Models of dimeric iron(III) complexes found in natural organic matter (NOM) have been shown to oxidize hydroquinone, a common functional group in NOM. The reaction kinetics support a pre-equilibrium mechanism in which rapid formation of an iron(III)-phenoxide complex is followed by rate limiting inner-sphere electron transfer.