

## Mononuclear Nitrogen/Oxygen-Ligated Mn(II) Halide Complexes: Progress Toward Understanding Halide Effects in Oxalate Degrading Enzymes

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Oxalate oxidases and decarboxylases are Mn(II)-containing enzymes that catalyze the degradation of oxalate. The active site structural features of these enzymes are similar, with each having an active site mononuclear octahedral Mn(II) center bound to the protein via a glutamate and three histidine residues. In oxalate oxidase enzymes, the Mn(II) center catalyzes the conversion of  $C_2O_4^{2-}$  to  $H_2O_2$  and  $CO_2$  via a reaction pathway that involves Mn(II) coordination of the oxalate substrate. Analysis of the EPR properties of barley oxalate oxidase in the presence of various halides has been reported.<sup>1</sup> To investigate chemistry relevant to oxalate oxidases, a new family of synthetic Mn(II) halide complexes, supported by a chelate  $N_3O$ -donor ligand, has been prepared and characterized. Synthesis, structural, and spectroscopic properties of these halide derivatives will be presented.

1. Whittaker, M. M.; Whittaker, J. W. *J. Biol. Inorg. Chem.* **2002**, *7*, 136-145.