

ABSTRACTS

31: József S. Pap, Balázs Kripli, István Bors, Dániel Bogáth, Michel Giorgi, József Kaizer, Gábor Speier, Transition metal complexes bearing flexible N₃ or N₃O donor ligands: Reactivity toward superoxide radical anion and hydrogen peroxide, *J. Inorg. Biochem.* 117 (2012) 60–70.

Mononuclear complexes of N-methylpropanoate-*N,N*-bis-(2-pyridylmethyl)amine (MPBMPA) and *N*-propanoate-*N,N*-bis-(2-pyridylmethyl)amine (HPBMPA) with first row transition metals from Mn to Cu were synthesized and characterized by spectroscopy (infrared, UV-visible), electrochemistry (cyclic voltammetry), microanalysis and in four cases X-ray crystallography. Structure of the complexes revealed high flexibility of these ligands that can adopt facial (Fe) and meridional (Cu) geometry. Activity in the degradation of reactive oxygen species (superoxide radical anion: superoxide dismutase (SOD)-like activity and hydrogen peroxide: catalase-like activity) was tested throughout the complex series in aqueous solutions. In connection with the catalytic dismutation of H₂O₂, bleaching tests with morin were also conducted in water. Comparison of the two ligands helped in elucidating the possible role of the carboxylate moiety in the different catalytic reactions. Although no general trends could be revealed between reactivity and constitution of the first coordination sphere, plausible explanations for differences are discussed individually for SOD like, catalase-like and bleaching activity.