Raman spectroscopy has been used to provide solution structural information on metalloporphyrins for many years. Recent solid state work [1] found that the totally symmetric $\nu_4$ high spin iron(III) oxidation state marker band in malaria pigment is enhanced when using a 780-nm excitation line. Closely related $\nu_4$ band with 780-nm excitation. The current work presents comparison of supramolecular features of closely related metalloporphyrin complexes that exhibit the $\nu_4$ enhancement and those that do not in exhibit attempt to demonstrate correlation of structural features and then on $\nu_4$ band. [FeCl(C$_6$H$_8$N$_2$O$_3$)$_2$] $\cdot$ Mr = 824.11, orthorhombic, Pnca, $a = 22.5275$ (7), $b = 15.0824$ (6), $c = 23.1602$ (9) $\AA$, $V = 7869.1 (5) \AA^3$, $Z = 8$, D$_{cak}$ = 1.391 Mg m$^{-3}$, Mo K$\alpha$, $\mu = 0.503$ mm$^{-1}$, F(000) = 3416, T = 123 K, R = 0.153 for 6887 unique observed reflections.

Keywords: iron porphyrin, Raman spectrum, malaria pigment

**P08.14.128**

**Relationship between nitrogen conformation and spectral properties in nitric oxide prodrugs**

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In continuing the synthesis and characterization of nitric oxide prodrugs of structure $\text{R}_2\text{N} = \text{N} = \text{O}$ spectral differences with different $\text{R}_2\text{N}$ groups have been noted. These differences are particularly pronounced when comparing pyrrolidine derivatives and other $\text{R}_2\text{N} = \text{N} = \text{O}$ compounds. We postulate that differences in the absorbance maximum reflect an extension of the diazeniumdiolate chromophore through electronic interaction with the $\text{R}_2\text{N}$ nitrogen in the case of the pyrrolidine derivatives that does not occur with the diethylamine, dimethylamine, or 6-membered heterocyclic analogues. This electronic overlap should be reflected in structural changes such as increasing planarity of the $\text{R}_2\text{N}$ system, decreasing N-OR' bond length, and increasing single bond character of the $\text{R}_2\text{N} - \text{N} = \text{O} - \text{OR}'$ molecule’s N=N linkage. In this study we provide evidence supporting this hypothesis by comparing structural parameters determined by x-ray crystallographic analysis of diazeniumdiolates.

Keywords: structure analysis, UV effects, drug design