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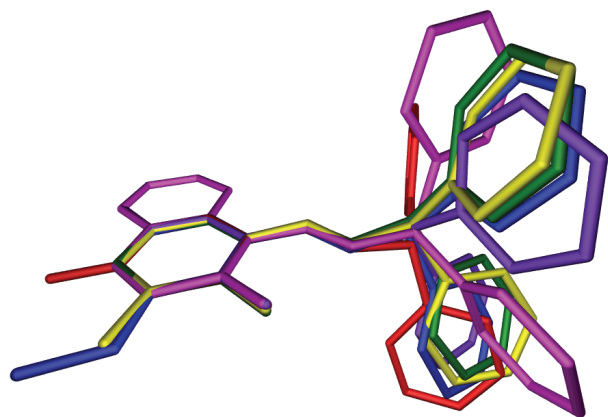


Figure 1. Overlapping pictures of non-planar *o*-hydroxy imines.

Keywords: Solvent-free synthesis, *o*-Hydroxy Schiff bases, Structure-property correlation, Thermochromism

MS36-P2 Structural features of the intermolecular interactions between PTA and nutraceutical acids in salts and platinum complexes

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The cage-like phosphine 1,3,5-triaza-7-phosphaadamantane (PTA) is attracting a lot of attention in coordination chemistry due to its favorable properties like stability to oxidation, small dimensions, solubility in water. Actually, Ru, Pd, Pt, Au, Ag complexes containing PTA are under investigation for aqueous phase or biphasic homogeneous catalysis, anticancer activity, photoluminescence experiments as well as crystal engineering. PTA molecule has a basic character, and it undergoes a selective nitrogen protonation, while the preferred coordination site is phosphorus. However, unlike the related compound hexamethylenetetramine, very few structural studies on PTA salts have been reported so far. We have therefore undertaken a systematic synthetic-structural study on PTA- nutraceutical acids salts, aimed at exploring the structural features of the interactions between the different molecules. In all the obtained crystals the two partners are connected through a strong hydrogen bond of N-H...O type, as shown in figure 1a; for this reason, we hypothesized that such an interaction could be maintained when PTA is bound to a transition metal, even if the *pK_a* values of the N-sites are in general modified by the coordination. The synthetic approach was then focused on platinum complexes, which are good candidates in medicinal applications as anticancer drugs, obtaining experimental evidences of the formation of supramolecular complex-acid adducts, in which it is still present an hydrogen bond involving one nitrogen atom of the coordinated PTA and the acidic carboxylic group. As an example, the *cis*-[PtCl₂(PTA)₂]/vanillic acid molecular couple is shown in Figure 1b.

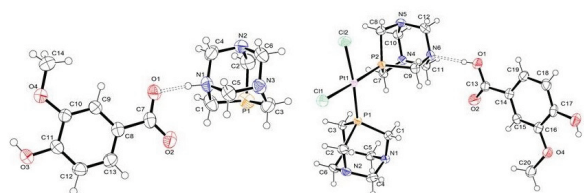


Figure 1. ORTEP views of a) PTA-vanillic acid salt and b) the *cis*-[PtCl₂(PTA)₂]/vanillic acid cocrystal

Keywords: PTA salts, Pt complexes, intermolecular interactions