

## CRYSTAL STRUCTURES OF NEW POLYNUCLEAR COPPER(II) TRIETHANOLAMINE - SALICYLATE COMPLEXES

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Copper species are widely found in nature and are present in many enzymes as polynuclear centers that catalyze selectively various oxidation reactions. Although increasing attention has been paid to the design of Cu complexes as models of copper oxidases, the use of multicopper complexes for such reactions still remains an unexplored area of research.

The main goal of this work was to find a simple synthetic route to generate multinuclear copper complexes as potential catalysts in different oxidation processes. As a result of the performed investigations, two new polynuclear copper compounds with triethanolamine (H<sub>3</sub>tea) and salicylic (H<sub>2</sub>sal) or 3,5-ditertbutylsalicylic (3,5-C<sub>4</sub>H<sub>9</sub>-H<sub>2</sub>sal) acids as ligands have been synthesized and their composition and crystal structure determined (see fig.).

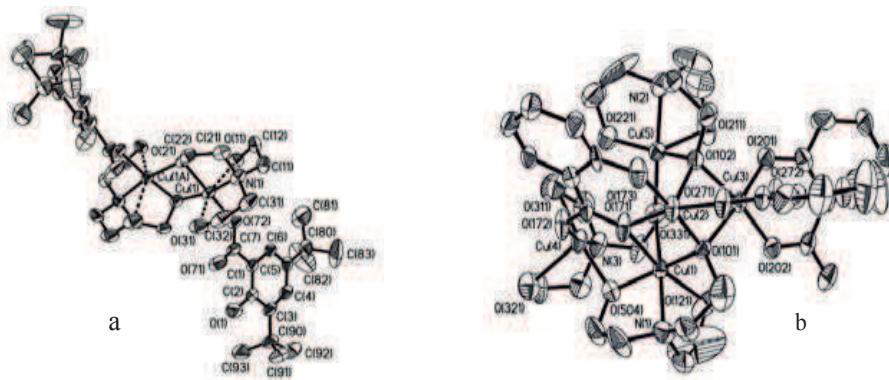


Fig. ORTEP representation of [Cu<sub>2</sub>(3,5-C<sub>4</sub>H<sub>9</sub>-Hsal)<sub>2</sub>(H<sub>2</sub>tea)<sub>2</sub>] **I** (a) and [Cu<sub>5</sub>(Htea)<sub>3</sub>(Hsal)<sub>2</sub>(sal)] **II** (b) with hydrogen atoms omitted for clarity.

Compound **I** has a similar structure with the previously described [Cu<sub>2</sub>(C<sub>6</sub>H<sub>5</sub>COO)<sub>2</sub>(H<sub>2</sub>tea)<sub>2</sub>] [1] and can be viewed as a dimer of two neutral {Cu(3,5-C<sub>4</sub>H<sub>9</sub>-HSal)(H<sub>2</sub>tea)} units. The dimerization is achieved through the bridging of one oxygen atom of each Htea<sup>2-</sup> unit. The carboxylate groups are bound in a terminal fashion to each copper atom. In complex **II** five Cu<sup>2+</sup> ions are connected by means of bridging oxygen atoms of hydroxyl and carboxyl groups of salicylic moieties and as well of hydroxyl oxygen atoms of three Htea<sup>2-</sup> ligands in a non-equivalent mode.

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### References

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