

Table caption

Table 1.1. Cu...Cu distances of some reported dinuclear copper complexes.

Table 1.2. Turnover number (K_{cat}) of the catechol oxidation reaction of some reported cobalt(II/III) and copper(II) complexes.

Table 2.1. Crystal Data and Structure Refinement for complexes **1** and **2**.

Table 2.2. Coordination bond lengths [\AA] and angles [$^\circ$] for **1** and **2**.

Table 2.3. Selected ac magnetic data for **1** at different dc applied fields.

Table 2.4. Selected ac magnetic data for **2** at different dc applied fields.

Table 2.5. Selected ac magnetic data for **1** and **2** at different dc applied fields.

Table 2.6. BVS results for complexes **1** and **2**.

Table 3.1. Crystal data and details of structure refinement for compounds **1** and **2**.

Table 3.2. Bond lengths (\AA) and angles ($^\circ$) for complexes **1** and **2**.

Table 3.3. H-bond parameters in complex **2**

Table 3.4. Structural and the exchange coupling constants data of complexes $[\text{CuL}]_4$ (L=tridentate salicylidene-ethanolato ligands).

Table 4.1. Crystal data and details of structure refinement for compounds **1** and **2**.

Table 4.2. Coordination bond distances [\AA] for the two complex cations of **1**.

Table 4.3. Coordination bond distances [\AA] for **2**.

Table 4.4. Intermetallic distances [\AA] for the two complex cations of **1**.

Table 4.5. Intermetallic distances [\AA] for **2**.

Table 4.6. Bond lengths (\AA) and angles ($^\circ$) for complexes **1** and **2**. The *italic* entries represent cross-diagonal bonds.

Table 4.7. Cyclic Voltammetric data for complexes **1** and **2**.

Table 5.1. Crystal data and details of structure refinement of complexes **1** and **2**.

Table 5.2. Selected bond lengths (\AA) and intermetallic distances for complexes **1** and **2**.

Table 5.3. Kinetics parameters for the catecholase activities of complexes **1** and **2** in methanol.

Table 5.4. $k_{\text{cat}}(\text{hr}^{-1})$ for the catechol oxidation reaction of compounds **1** and **2** and of previously reported tetranuclear Cu^{II} complexes by using 3,5-DTBC as substrate.

Table 5.5. Kinetics parameters for the protein binding activities of the complexes **1** and **2**.