Synthesis, crystallographic and spectroscopic studies of dimeric Cu^{I} complexes with Schiff-base-containing triazole ligands.

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New Cu^{I} complexes of the Schiff-base-containing triazole ligands *N*-[(*E*)-(4-chlorophenyl)methylidene]-4*H*-1,2,4-triazol-4-amine (ClPhtrz) and *N*-[(*E*)-phenylmethylidene]-4*H*-1,2,4-triazol-4-amine (Phtrz) have been synthesised and characterised. Depending on the reaction conditions ClPhtrz forms two different dimeric complexes **1** and **2**. X-ray crystallography revealed that each copper centre exhibits a planar trigonal coordination in **1**, while the tetrahedral coordination sphere of the copper centre in **2** is completed by a solvent molecule. In dimeric complex **3** the tetrahedral coordination of the Cu^{I} ions is formed by two monodentate and two bidentate (bridging) Phtrz ligands. Complexes **1**–**3** are unstable and easily lose coordinating and/or solvating acetonitrile molecules giving **4** (from **1** and **2**) and **5** (from **3**). On the basis of ESI MS and ^{1}H NMR and UV/Vis spectroscopy, it was shown that dimeric complexes **1**–**5** do not survive upon dissolution and dissociate rapidly forming mainly a 1:2 monomeric complex, along with a minor 1:1 complex.

Adres publiczny

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