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Synthesis and characterization of binuclear azide-bridged hydrazone Cu(II) complex

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The condensation product of 7-acetyl-6-azaindole and Girard's T reagent ((*E*)-2-(2-(1-(1*H*-pyrrolo[2,3-*c*]pyridin-7-yl)ethylidene)hydrazineyl)-*N,N,N*-trimethyl-2-oxoethan-1-aminium, HL ligand) was used as a ligand in the reaction with Cu(BF₄)₂·6H₂O and NaN₃. The reaction led to the formation of a binuclear Cu(II) complex containing two end-to-end (di-μ_{-1,3}-N₃) azide bridges, as well as two NNO-donor hydrazone ligands, forming an axially elongated square pyramidal geometry around each Cu(II) center. This end-to-end (di-μ_{-1,3}-N₃) azide bridge binding mode has not yet been reported, in Cu(II) complexes containing the NNO-donor hydrazone ligands, which makes the structure of the complex even more interesting for further studies. The complex was characterized by elemental analysis, IR spectroscopy and X-ray crystallography, and it was found that it crystallizes in the triclinic space group P-1 with the asymmetric unit comprising one Cu(II) centre, zwitterionic ligand L, one azide (N₃⁻) ligand and BF₄⁻ counter anion.

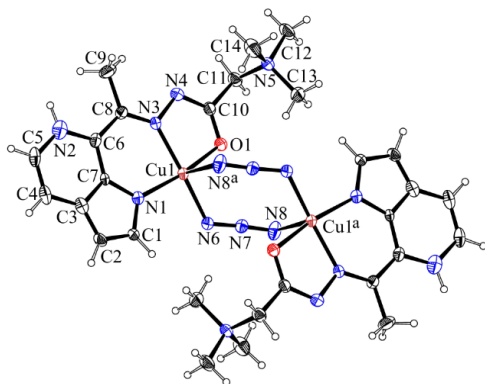


Figure 1. ORTEP presentation of the complex cation $[Cu_2L_2(\mu_{1,3}-N_3)_2]^{2+}$

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