Copper like all metals forms coordination complexes with ligands and stable complexes with amino acids. One of those complexes is Bis(L-threonine)cooper(II).H2O (Cu(C4H8NO3)2.H2O) that crystallizes in the monoclinic structure with 2 molecules by unit cell, space group P21 and cell parameters a = 11.02(2) Å, b = 4.90(1) Å, c = 11.16(2) Å and β = 93.5(5)°. In this work, we used the nickel instead of copper to grow the Bis(L-threonine)nickel(II) Monohydrate (Ni(C4H8NO3)2.H2O). In order to obtain this crystal, 1 mol of NiCl2.6H2O was added to an aqueous solution with 2 mols of L-thronine. NaOH was added to this solution to obtain a solution with pH = 8. Beautiful small plate-like blue crystals were grown by slow evaporation method after keeping the temperature constant at 30°C. X-ray powder diffraction measurements of the Bis(L-threonine)nickel(II).H2O crystal showed a pattern similar to the Bis(L-threonine)cooper(II).H2O crystal but not similar enough to perform the Rietveld refinement using the cif file of the copper crystal. To study the behavior of nickel crystal as a function of the temperature, powder X-ray diffraction measurements were carried out in a Bruker D8 Advance diffractometer using an Anton Paar temperature chamber (TTK 450). For the measurements in the range -190°C to 110°C it was observed shifts in the peaks. For the measurements above 110°C it was observed the appearing and disappearing of peaks, characterizing a structural phase transition. Raman Spectroscopy measurements at room temperature and as a function of temperature were also performed.

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