BALAN, Greta, BURDUNIUC, Olga, USATAIA, Irina et al.**Novel 2-formylpyridine 4-allyl-S-methylisothiosemicarbazone and Zn(II), Cu(II), Ni(II) and Co(III) complexes: Synthesis, characterization, crystal structure, antioxidant, antimicrobial and antiproliferative activity**. In: **Applied Organometallic Chemistry. 2020, Vol.34, Issue 3, pp. 1-17. ISSN 1099-0739.**

New zinc (II), copper (II), nickel (II) and cobalt (III) complexes, $[Zn(HL)_2]I_2$ **(1)**, $[Cu(HL)Cl_2]$ **(2)**, $[Cu(HL)Br_2]$ **(3)**, $[Cu(HL)(H_2O)_2](ClO_4)_2$ **(4)**, $[Ni(HL)_2]I_2 \cdot H_2O$ **(5)**, $[Co(L)_2]Cl$ **(6)**, $[Co(L)_2]NO_3$ **(7)**, $[Co(L)_2]I \cdot [Co(L)_2](I_3)$ **(8)** were obtained with 2-formylpyridine 4-allyl-*S*-methylisothiosemicarbazone (**HL**). The isothiosemicarbazone ligand was characterized by NMR (^1H and ^{13}C), IR spectroscopy and X-ray diffraction. All the complexes were characterized by elemental analysis, IR, UV–Vis, ESI-MS spectroscopy, molar conductivity, magnetic susceptibility measurements. X-ray diffraction analysis on the monocrystal and powder elucidated the structure of the complexes **1**, **5**, **7** and **8**.*T*he ligand and the complexes were tested for their antioxidant and antimicrobial activity against *Staphylococcus aureus*, *Escherichia coli*, *Klebsiella pneumoniae* and *Candida albicans.* Also, the antiproliferative properties of these compounds on human leukemia HL-60, human cervical epithelial HeLa, human epithelial pancreatic adenocarcinoma BxPC-3, human muscle rhabdomyosarcoma spindle, large multinucleated RD cells and normal MDCK cells have been investigated. The nickel complex **5** and cobalt complexes **6**, **7** showed promising antiproliferative activity and low toxicity.