Amalgamating metalloligands with coordination networks

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The O4-cavity in [Cu{(R,R)-1}] ((R,R)-H21 = 1,6-bis(3-ethoxy-2-hydroxyphenyl)-(3R,4R)-(−)-cyclohexane-1,2-diyl-2,5-diazahexa-1,5-diene) binds HgBr2 to give P- and M-[Cu{(R,R)-1}HgBr2]. In the solid state, there is no diastereoselectivity with respect to the handedness of the helical twist adopted by the co-ordinated Schiff base ligand and [Cu{(R,R)-1}HgBr2] crystallizes with two independent molecules pos-sessing M- and P-chirality, respectively, in the asymmetric unit. Single crystal structural data confirm that the same phenomenon is observed when [Ni{(R,R)-1}] is treated with HgBr2or Hg(CN)2. How-ever, when an excess of Hg(NO3)2ůH2O reacts with [Cu{(R,R)-1}], C-mercuration occurs in both 3-ethoxy-2-hydroxyphenyl rings in addition to the coordination of a Hg(NO3)2 unit within the O4-cavity of [Cu{(R,R)-1}]. This results in the formation of a two-dimensional coordination polymer network. The direct C-mercuration of a coordinated Schiff base ligand is not unique to the ligand in [Cu{(R,R)-1}], but also occurs during the reaction of [Cu(3)] (H23 = 1,7-bis(3-ethoxy-2-hydroxyphenyl)- 2,6-diazahepta-1,6-diene) with Hg(NO3)2ůH2O proceeds in an analogous manner with C-mercuration occurs para to the phenolic oxygen atom.
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