Operationally Convenient and Scalable Asymmetric synthesis of (2*S*)- and (2*R*)-α-(Methyl)cysteine Derivatives via Alkylation of Chiral Alanine Schiff Base Ni(II) Complexes

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This research demonstrates that the methylation of *N*-benzyl cysteine Schiff bases derived Ni(II) complexes leads to the formation of the corresponding dehydroalanine containing products and cannot be used for preparation of the target α-(methyl)cysteine. In sharp contrast, the alternative strategy involving the thiomethylation of the Ni(II) complexes of alanine Schiff bases, is viable and practically attractive approach affording the desired α-(methyl)cysteine containing derivatives. This work also reveals a significant, and rather unexpected, difference in the stereochemical performance of proline and 3,5-dihydro-4*H*-dinaphth[2,1-*c*:1',2'-*e*]azepine derived chiral ligands, showing a clear superiority of the former in terms of chemical yields and diastereoselectivity of the α-(methyl)cysteine products formation.