Catalytic Enantioselective Synthesis of Chiral Isatin Derivatives by an Aldol Approach

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A catalytic enantioselective aldol reaction of alkenyl esters with isatins was achieved using an (S)-BINOL-derived chiral tin dibromide possessing a 4-tert-butylphenyl group at 3- and 3'-positions as the chiral pre-catalyst in the presence of sodium methoxide and methanol. Optically active 3-alkylated 3-hydroxy-2-oxindoles having up to 98% ee were diastereoselectively obtained in high yields not only from cyclic alkenyl esters but also from acyclic ones under the influence of the in situ generated chiral tin bromide methoxide.

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