Synthesis of MK-8742

Significance: MK-8742 is an inhibitor of the hepatitis C nonstructural protein NS5a. Key steps in the synthesis depicted are (1) the asymmetric transfer hydrogenation of the imine B and (2) the crystallization-induced diastereoselection in the formation of the N,O-acetal F.

Comment: The dr in the N,O-acetal formation E → F (7:1) improved to >99:1 by conducting the reaction in MeCN as the solvent and with TFA as the acid catalyst. KMnO4 effects the oxidation of the indoline F without racemization of the N,O-acetal, providing indole G in 83% yield and with >99% ee.