Diastereoselective Formation of Cyclopropanols by a Chromium(II)-mediated Cross-coupling Reaction

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Various 2-(α-hydroxyalkyl)cyclopropanols were generated by chromium(II)-mediated cross-coupling of acroleins and aldehydes with high diastereoselectivities up to 95%. The unstable diols were converted selectively to the stable monosilyl ethers by treatment with TBDMS-Cl in the presence of the second secondary alcohol.

Key words: Chromium, Aldehydes, C-C Coupling, Cross-coupling, Diastereoselectivity