

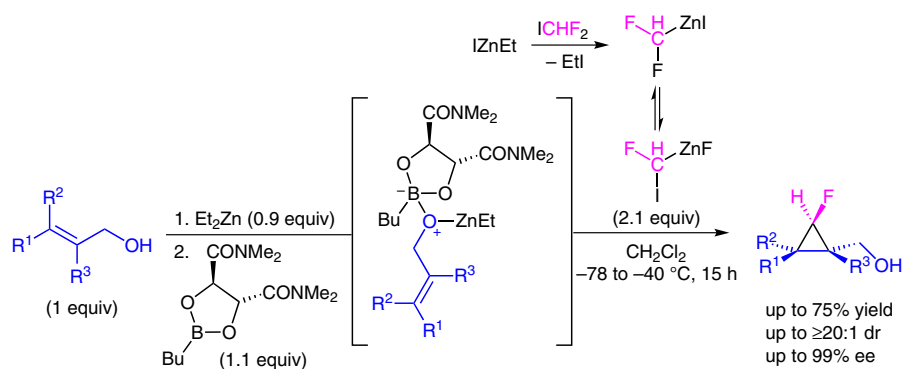
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Highly Enantioselective Simmons–Smith Fluorocyclopropanation of Allylic Alcohols via the Halogen Scrambling Strategy of Zinc Carbenoids

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Highly Enantioselective Fluorocyclopropanation of Allylic Alcohols

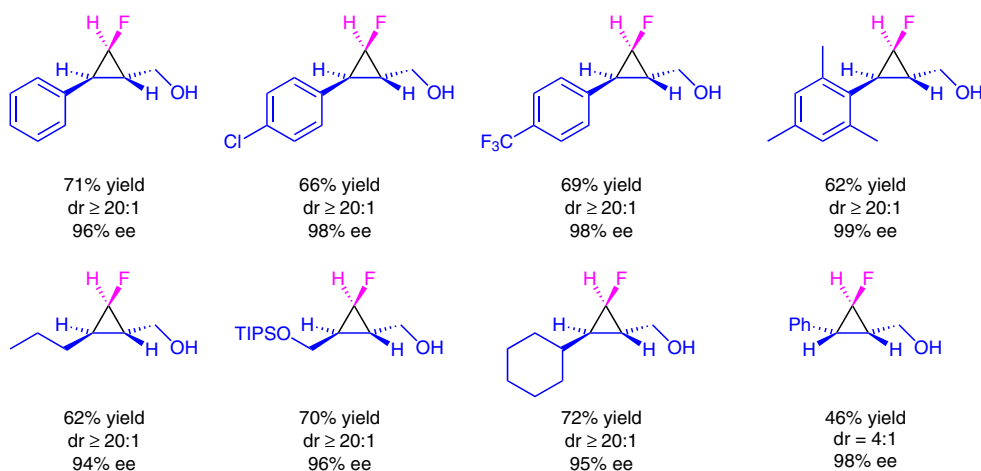


R¹ = H, *n*-Pr, Cy, (CH₂)₂Ph, CH₂OTIPS, Ph, Mes, 4-FC₆H₄, 4-ClC₆H₄, 4-BrC₆H₄, 4-F₃CC₆H₄, PMP, 2-MeC₆H₄

R² = H, Ph

R³ = H, Me

Selected examples:



Significance: A highly enantio- and diastereoselective Simmons–Smith fluorocyclopropanation of allylic alcohols using difluoriodomethane and ethylzinc iodide as the substituted carbenoid precursors has been disclosed. The corresponding monofluorocyclopropanes are obtained in good yields.

Comment: The reaction is very versatile since it features a broad scope and gives access to biologically relevant monofluorocyclopropane units from readily available precursors. The halogen scrambling at the zinc carbenoid acts as the key step in this reaction.

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