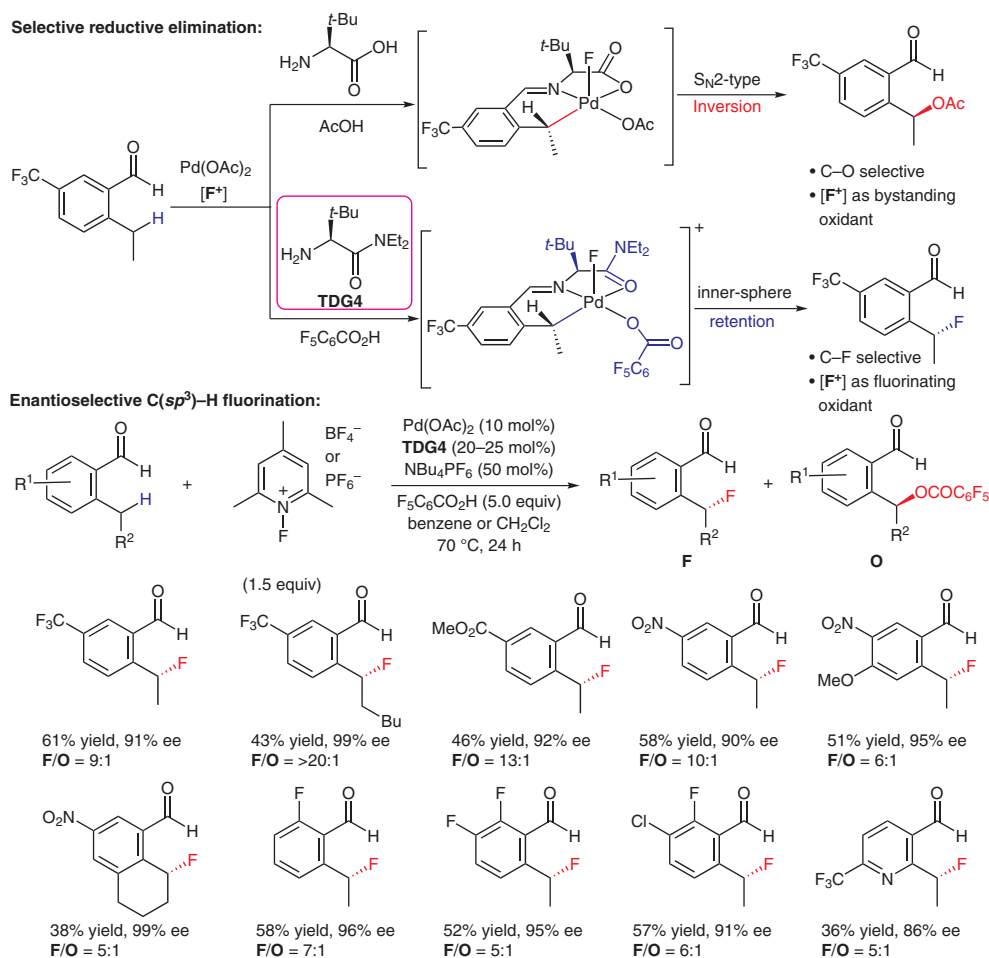


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Controlling Pd(IV) Reductive Elimination Pathways Enables Pd(II)-Catalysed Enantioselective C(sp³)-H Fluorination

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Palladium-Catalyzed Enantioselective C(sp³)-H Fluorination



Significance: The presence of a C–F bond uniquely affects the physical and biological characteristics of molecules. The authors have developed a new direct method for synthesizing chiral organofluorines by palladium-catalyzed C(sp³)-H fluorination. Appropriate choice of a chiral transient directing group is key to the selective formation of the desired C(sp³)-F bond rather than the undesired C(sp³)-O bond.

Comment: Several mechanistic studies indicated that the desired C(sp³)-H fluorination proceeds by an inner-sphere pathway, whereas the undesired C(sp³)-O formation occurs through an S_N2-type mechanism.

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Category

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

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