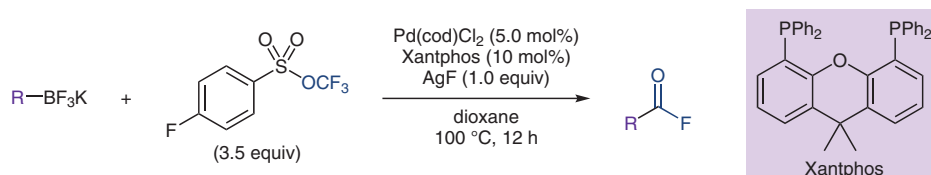


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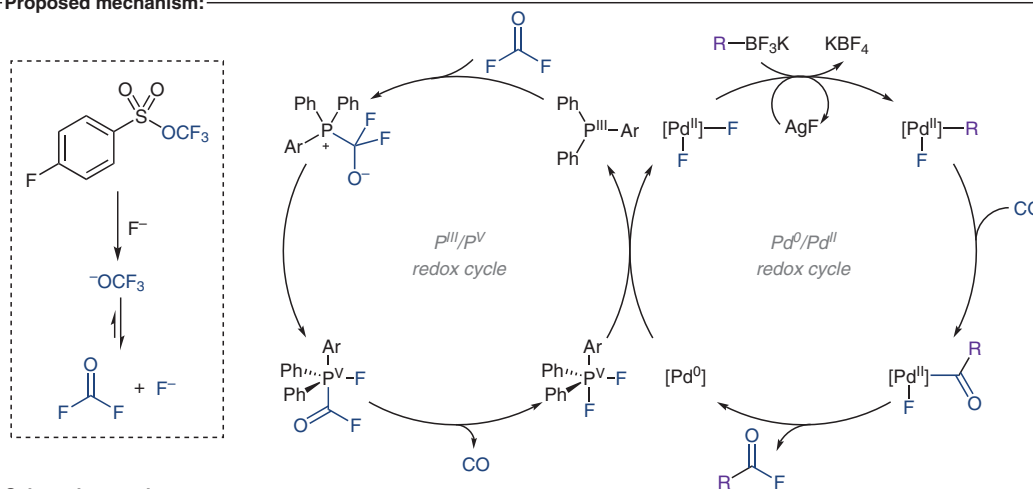
Fluorocarbonylation Via Palladium/Phosphine Synergistic Catalysis

Nat. Commun. 2023, 14, 4583 DOI: 10.1038/s41467-023-40180-6.

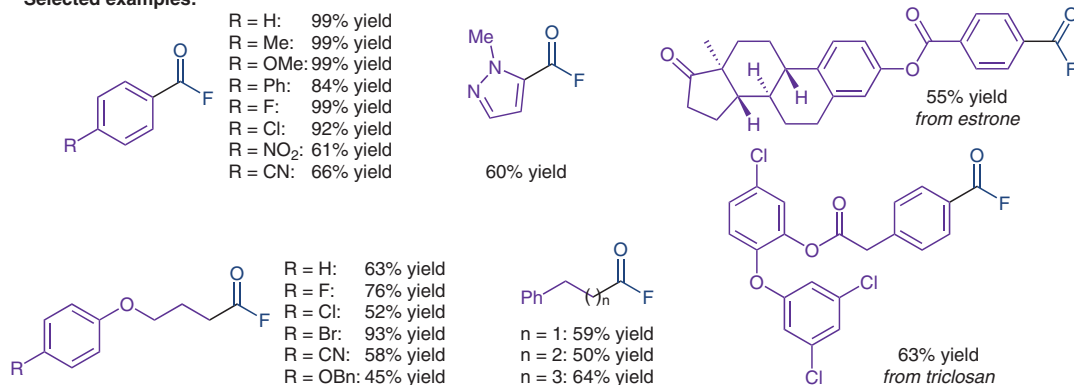
# Making Acyl Fluorides by Synergistic Palladium/Phosphine-Catalyzed Fluorocarbonylation



Proposed mechanism:



Selected examples:



**Significance:** A novel method for the synthesis of acyl fluorides from potassium (het)aryl/alkyl trifluoroborates is reported. The trifluoromethyl arylsulfonate (TFMS) serves as source of the in situ generated hazardous  $\text{COF}_2$  gas.

**Comment:** Detailed mechanistic studies including DFT calculations support the proposed mechanism. The dual role of the phosphine is noteworthy, acting as both organocatalyst and ligand of the palladium redox cycle.

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Synfacts 2023, 19(11), 1097 Published online: 17.10.2023  
DOI: 10.1055/s-0042-1752257; Reg-No.: M14123SF

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Category

Metals in Synthesis

Key words

acyl fluorides

fluorocarbonylation

palladium catalysis

phosphine catalysis

synergistic catalysis

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