

Accepted Manuscript

Mild and Selective α -Fluorination of Carbonyl Compounds (ketones, 1,3-diketones, β -ketoesters, α -nitroketones, and β -ketonitriles) with *Selectfluor* (F-TEDA-BF₄) in Imidazolium ILs [BMIM/PF₆ or BMIM/NTf₂] with Brønsted-acidic IL [PMIM(SO₃H)/OTf] as Promoter

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PII: S0040-4039(15)01259-9
DOI: <http://dx.doi.org/10.1016/j.tetlet.2015.07.084>
Reference: TETL 46573

To appear in: *Tetrahedron Letters*

Received Date: 23 June 2015
Revised Date: 20 July 2015
Accepted Date: 27 July 2015

Please cite this article as: Srinivas Reddy, A., Laali, K.K., Mild and Selective α -Fluorination of Carbonyl Compounds (ketones, 1,3-diketones, β -ketoesters, α -nitroketones, and β -ketonitriles) with *Selectfluor* (F-TEDA-BF₄) in Imidazolium ILs [BMIM/PF₆ or BMIM/NTf₂] with Brønsted-acidic IL [PMIM(SO₃H)/OTf] as Promoter, *Tetrahedron Letters* (2015), doi: <http://dx.doi.org/10.1016/j.tetlet.2015.07.084>

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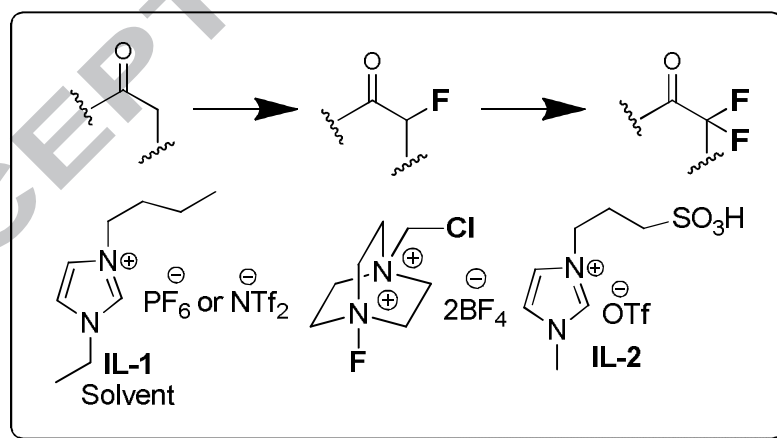
Revised

Mild and Selective α -Fluorination of Carbonyl Compounds (ketones, 1,3-diketones, β -ketoesters, α -nitroketones, and β -ketonitriles) with *Selectfluor* (F-TEDA- BF_4) in Imidazolium ILs [BMIM/ PF_6 or BMIM/ NTf_2] with Brønsted-acidic IL [PMIM(SO_3H)/OTf] as Promoter

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Abstract: Structurally diverse ketones, 1,3-diketones, and β -ketoesters, were selectively monofluorinated with *Selectfluor* (F-TEDA- BF_4) (1 equiv) in [BMIM][PF_6] as solvent and [PMIM(SO_3H)] [OTf] as promoter under mild conditions. In selected cases, the monofluorinated products were transformed to the gem-difluoro derivatives by employing an additional equivalent of *Selectfluor*, and gem-difluoro-derivatives were synthesized directly from the substrates by employing 2 equivalents of *Selectfluor*. The method was extended to monofluorination of representative α -nitroketones and β -ketonitriles using [BMIM][NTf_2] without the need for promoter. The described method offers the added advantage of recycling and reuse of the IL solvent.



Keywords: α -fluorination of carbonyls; 1,3-diketones; β -ketoesters; α -nitroketones; *Selectfluor*; imidazolium-IL; Brønsted-acidic IL

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