Enolonium Species-Umpoled Enolates

Enolonium species/iodo(III) enolates of carbonyl compounds have been suggested to be intermediates in a wide variety of hypervalent iodine induced chemical transformations of ketones, including α-C-O, α-C-N, α-C-C, and alpha-carbon-halide bond formation, but they have never been characterized. We report that these elusive umpoled enolates may be made as discrete species that are stable for several minutes at -78 degrees C, and report the first spectroscopic identification of such species. It is shown that enolonium species are direct intermediates in C-O, C-N, C-Cl, and C-C bond forming reactions. Our results open up chemical space for designing a variety of new transformations. We showcase the ability of enolonium species to react with prenyl, crotyl, cinnamyl, and allyl silanes with absolute regioselectivity in up to 92% yield.

General information
State: Published
Organisations: Department of Chemistry, Ariel University Center of Samaria, Weizmann Institute of Science
Authors: Arava, S. (Ekstern), Kumar, J. N. (Ekstern), Maksymenko, S. (Ekstern), Iron, M. A. (Ekstern), Parida, K. N. (Ekstern), Fristrup, P. (Intern), Szpilman, A. M. (Ekstern)
Pages: 2599-2603
Publication date: 2017
Main Research Area: Technical/natural sciences

Publication information
Journal: Angewandte Chemie-international Edition
Volume: 56
ISSN (Print): 1433-7851
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 10.8 SJR 5.8 SNIP 2.104
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 5.958 SNIP 2.235 CiteScore 11.13
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 5.805 SNIP 2.309 CiteScore 10.84
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 5.681 SNIP 2.204 CiteScore 10.7
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 6.362 SNIP 2.338 CiteScore 10.55
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 6.062 SNIP 2.387 CiteScore 10.75
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 5.858 SNIP 2.31
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 5.52 SNIP 2.218
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 5.438 SNIP 2.115