World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Rh(III)-Catalyzed Cross-Coupling Reaction of 8-Methylquinolines with Maleimides

Authors : Sangil Han, In Su Kim

Abstract : Transition-metal-catalyzed C–H bond activation and its subsequent functionalization has been one of the most attractive topics in organic synthesis because of its remarkable potential for atom economy and environmental sustainability. In this addition, a variety of C(sp2)–H functionalization has been developed under metal catalysis in the past decade. Recently, much attention has been moved towards the C(sp3)–H functionalization events, which continue to be a challenging issue. In this area, directing group assisted sp3 C–H functionalization has been explored by use of amides, carboxylic acids, oximes, N-heterocycles, and etc. In particular, 8-methylquinolines have been found as good substrates for sp3 C–H functionalization due to its ability to form cyclometalated complexes. Succinimides have been recognized as privileged structural cores found in a number of bioactive natural products, pharmaceuticals, and functional materials. Furthermore, the reduced derivatives such as pyrrolidines and γ-lactams have been also found in a large number of pharmaceutical relevant molecules, thus making them one of the most important and promising compounds. We herein describe the first C(sp3)–H activation of 8-methylquinolines and subsequent functionalization with maleimides to afford various succinimide derivatives.

Keywords : C(sp3)–H activation, 8-methylquinolines, maleimides, succinimides
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020

Open Science Index, Mathematical and Computational Sciences Vol:14, No:12, 2020 publications.waset.org/abstracts/58548.pdf