World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:12, No:11, 2018

Synthesis and Structural Characterization of 6-Nitroindazole Derivatives

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Abstract : The indazole derivatives exhibit a wide spectrum of biological activities. They are known for their anti-tumor, antiplatelet, anti-viral, anti-microbial, anti-inflammatory, anti-leishmania and even anti-spermatogen. As part of our research on the synthesis of a number of heterocycles capable of exhibiting a biological and pharmacological property, due to our ongoing interest in the development of a simple and low-cost procedure for obtaining heterocyclic compounds that may have an interest for medicinal purposes. We present in this work the synthesis of 6-nitro-indazoles derivatives, using two different methods. the first method is the alkylation of Nitroindazole by two different alkylating agents under the conditions of solid/liquid phase transfer catalysis in N, N-dimethylformamide (DMF) in the presence of potassium carbonate (K_2CO_3) as a base, and tetra-n-butylammonium bromide (BTBA) as a catalyst. While the other method is the 1,3-dipolar cycloaddition, in this case, we have undertaken the preparation of bi-heterocyclic containing the 6-nitroindazole associate with group of isoxazoline, isoxazole or 1,2,3-Triazole under normal conditions and, under the catalytic conditions of the click chemistry we were also able to determine the structures without any ambiguity by the ^1H and ^{13}C NMR.

Keywords : indazole, 6-nitroindazole, isoxazole, 1,2,3-Triazole
Conference Title : ICBCOC 2018 : International Conference on Bulk Chemicals and Organic Chemistry
Conference Location : San Francisco, United States
Conference Dates : November 26-27, 2018