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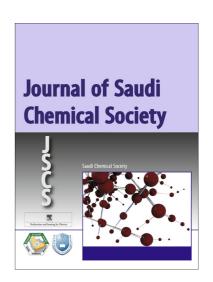
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CCEPTED MANUSCRIPT

Selective synthesis of Ureas and Tetrazoles from amides controlled by experimental conditions using conventional and microwave irradiation.

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Abstract

An efficient synthetic procedure has been achieved for selective synthesis of 1,5-disubstituted

tetrazoles and diaryl urea from secondary amides insitu in the presence of NaN3 and POCl3 as a solvent, both by

conventional and microwave methods. The reaction conditions were optimized to yield selectively either

tetrazoles or urea derivatives from reasonable to excellent yields. These conversions have been tested and

verified with various secondary amide precursors. The synthesized compounds were characterized by ¹H NMR,

¹³C NMR and ESI-MS spectroscopic techniques.

Keywords:

Tetrazoles; in situ synthesis; substituted urea; microwave synthesis; one pot conversion.

1. Introduction

The selective conversion/synthesis is the very important process in organic synthesis [1]. Especially,

the selective conversion from the one starting material to different products [2] by altering the reaction

conditions has additional advantages such as using minimum reagents, avoiding alternate route, and

minimal by-product formation. In the organic synthesis, there are chances for the formation of

unprecedented products [3]. But many researchers are not interested in identifying these unprecedented

products and the causes for them. In our case, we found that urea formed as a side product is identified,

during the synthesis of tetrazoles from amides in thermal method and microwave irradiation. Further,

this conversion is continued to arrive at the selective synthesis of either urea or tetrazole from the same

precursor (amide) under conventional method. We also extended this scope to develop the same

selectivity under microwave condition also. Because the microwave assisted synthetic method has

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