



Curtius Rearrangement Reactions using 7-Methoxy benzofuran-2- Carbonylazide

H. Hanumanagouda¹ Manjunatha Harihara Mathada²
and K. M. Basavaraja^{3*}

1. P.C. Jobbins Science College, Hubballi, Karnataka, **INDIA**

2. S. B. Arts and K. C. P. College, Vijayapura-586103, Karnataka, **INDIA**

3. Department of Chemistry/Industrial Chemistry, Vijayanagara Sri Krishnadevaraya University,

Ballari-583105, Karnataka, **INDIA**

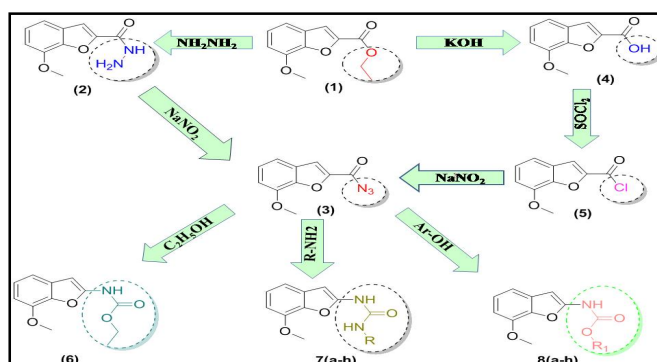
Email: kmbasavaraja@gmail.com

Accepted on 19th April, 2022

ABSTRACT

Our continued search for biologically active benzofuran derivatives involving carbamates and carbamides, we now report the synthetic investigation of 7-methoxybenzofuran-2-carbamates (**6** and **8a-h**) and carbamides (**7a-h**) via the Curtius rearrangement of 7-methoxybenzofuran-2-carbonylazide (**3**). The required intermediate carbonyl azide was synthesised from ethyl-7-methoxybenzofuran-2-carboxylate (**1**) by two established synthetic routes. One through the carboxylic acid (**4**) and acid chloride (**5**) and the other through carbonyl hydrazide (**2**). The carbonyl azide was subjected to Curtius rearrangement in anhydrous medium with ethanol and various aromatic phenols to obtain carbamates (**6** and **8a-h**) while with primary amines and cyclohexylamine to obtain carbamides (**7a-h**). The structures of all the synthesized compounds were confirmed by their IR, ¹HNMR and Mass spectral data. All the newly synthesized compounds were screened for anti bacterial activity and antifungal activity. Few selected compounds were screened for their anti oxidant properties and DNA cleavage studies. Few compounds exhibited appreciable activity.

Graphical Abstract



Synthesis of carbamates and carbamides using 7- methoxybenzofuran-2-carbonylazide

Keywords: Carbamates, Carbamides, Benzofuran, Curtius rearrangement, Antibacterial, Anti-oxidant properties, DNA cleavage