

SEPTEMBER
23-27TH
2024

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Iodine-catalyzed synthesis of pyrido/benzo[*b*][1,4]selenazines

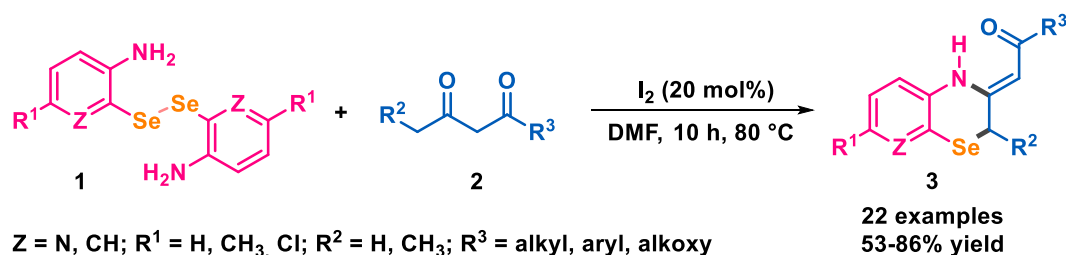
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Keywords: Iodine, β -dicarbonyl compounds, 1,4-selenazines.

ABSTRACT

The synthesis of selenium-functionalized heterocycles is of growing interest due to their widespread applications as synthetic intermediates, optoelectronic devices, and pharmacologically active compounds.¹ Among them, benzo[1,4]selenazines, bearing a selenium and a nitrogen atom organized in a six-membered ring fused to a benzene unit, found synthetically usefulness in the preparation of functional organic materials,² and in medicinal chemistry as multi-targeting drug to treat Alzheimer's disease and microbial infections.³

This work describes the selective synthesis of pyrido/benzo-fused 1,4-selenazines through the reaction of bis(3-amino-2-pyridyl) or bis(2-aminophenyl) diselenides **1** with various β -dicarbonyl compounds **2**. When molecular I₂ was used as catalyst, a series of pyrido/benzo[*b*][1,4]selenazines **3** bearing an exocyclic α,β -unsaturated system with *Z* configuration were obtained (Scheme 1). The versatility of the protocol was demonstrated not only by the access to a variety of 1,4-selenazine derivatives, but also by the structural diversity in the 1,3-dicarbonyl precursors, incorporating multifunctionalities in the synthesized heterocycles.



Scheme 1. Synthesis of pyrido/benzo[1,4]selenazines.

ACKNOWLEDGEMENTS

The authors thank FAPERGS (ARD 23/2551-0000800-9) and CNPq. This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brazil (CAPES) - Finance Code 001. RFS also thanks CNPq for the fellowship received.

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