SEPTEMBER 23-27 2024
19BMOS
BRAZILIAN MEETING ON ORGANIC SYNTHESIS
BENTO GONÇALVES, RS - BRAZIL

Synthesis of *N*-Heterocyclic functionalized arylselanyl benzenes

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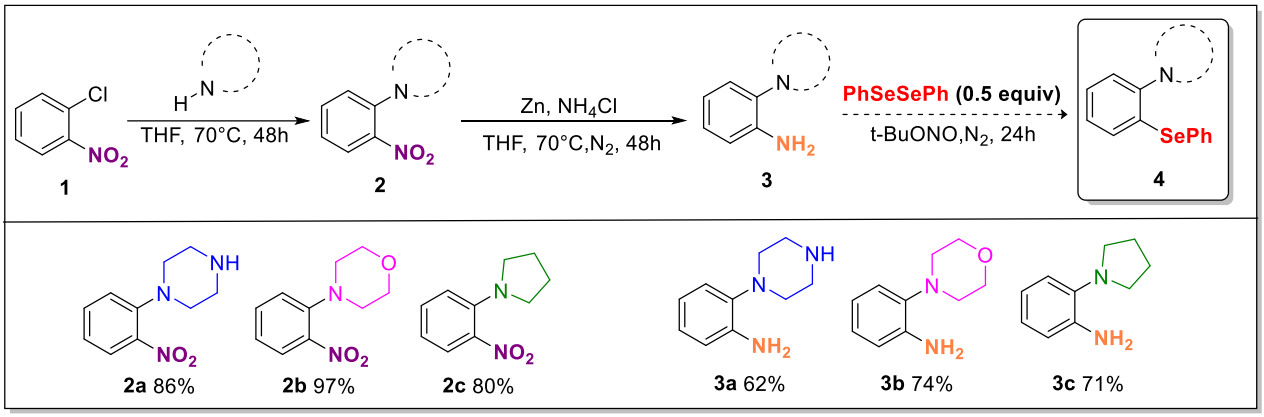
Keywords: *synthesis, N-heterocycles, selenium.*

ABSTRACT

N-Heterocyclic compounds are crucial in medicinal chemistry due to their unique chemical properties and biological activities. These compounds are integral to many drugs across various therapeutic classes, including antibiotics, anticancer agents, and antivirals, making them essential in the development of new treatments for a wide range of medical conditions.[1] Selenium-containing organic compounds are of significant importance due to their applications in organic synthesis, diverse biological activities, and potential therapeutic uses. These compounds exhibit antioxidant, anticancer, antiviral, and anti-inflammatory properties, making them valuable in the development of treatments for various diseases.[2] Thus, the search for molecules that combine these two types of structural units has become attractive and has been explored by our research group in recent years.[3] Thus, in this work, we describe our efforts to synthesize *N*-Heterocyclic functionalized arylselanyl benzenes **4**, aiming to apply the obtained products in the field of pharmacology (Scheme 1).



Scheme 1

We start our work with the synthesis of nitro compounds **2** through substitution reactions of 2-chloronitrobenzene with *N*-heterocycles, such as piperazine, morpholine, and pyrrolidine. The products were obtained in good yields and were subjected to reduction reactions to the respective anilines **3**, using a mixture of Zn and NH_4Cl. All the products were obtained in good yields and their structures were confirmed by NMR analyses. The transformation of the respective anilines **3** into *N*-Heterocyclic functionalized arylselanyl benzenes **4** is currently under development (Scheme 1).

ACKNOWLEDGEMENTS

LaSOL, CNPq, CAPES, FAPERS e a UFPel.

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