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Tribromoisocyanuric acid-mediated telescopic synthesis of selenazoles

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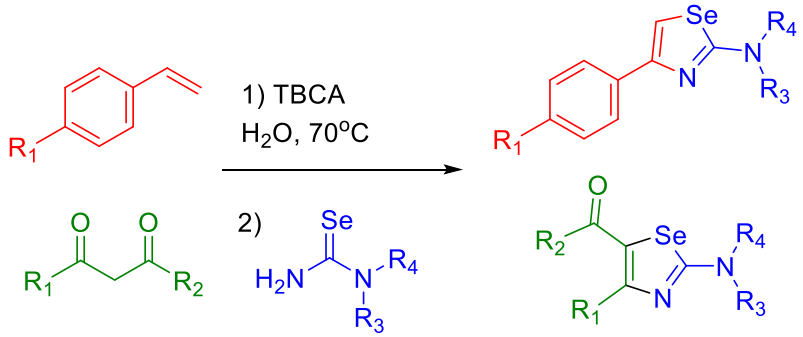
ABSTRACT

The telescopic approach in organic synthesis stands out for minimizing the production of chemical waste, reducing operational costs, and avoiding contact with toxic and/or unstable intermediates.[1] Selenazoles constitute a class of compounds of great medicinal and agriculture interest.[2,3] Traditionally, they are prepared via Hanztsch synthesis, however, this methodology has some disadvantages, such as the use of toxic and difficult-to-access reagents. Furthermore, more easily manipulated sources of electrophilic bromenium ions are being investigated. In this context, the option arises of using tribromoisocyanuric acid (TBCA) to carry out diverse halogenation reactions.[4] This work studies the telescopic synthesis of 2-amino-selenazoles mediated by TBCA. The results demonstrated that TBCA can be used in the preparation of 2-amino-selenazoles, highlighting the scope of the method. Moreover, the method could be used in the synthesis of 2-amino-selenazoles from not only styrene derivatives (57 – 65%), but also β-dicarbonyl compounds (25 – 68%), with a wide range of substitutions.



R_1 = H, CH_3, CF_3, Br, C_6H_5
R_2 = H, CH_3, C_6H_5
R_3 = H, CH_3
R_4 = H, CH_3

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