INVESTIGATION OF ELECTROPHYLIC CYCLIZATION REACTIONS OF BENZIMIDAZOL-2-YL ALKYNES

Indrė Misiūnaitė, Justas Pošiūnas, Rita Bukšnaitienė, Ieva Karpavičienė

Faculty of Chemistry and Geosciences, Vilnius University, Naugarduko g. 24, LT-03225, Vilnius, Lithuania
Indre.Misiunaite@gmail.com

The synthesis of heterocycles has always been an important process in organic synthesis. A variety of synthetic approaches to the heterocyclic ring structures can be found in literature [1]. Quite common way to obtain heterocycles from alkynes is *via* cyclization reactions catalyzed by transition metals [2]. On the other hand, in recent years electrophilic initiated cyclization reactions are becoming more popular [3]. Furthermore, there are no articles about reactivity and electrophile promoted cyclizations of benzimidazol-2-yl alkynes. Consequently to this we decided to synthesize various benzimidazol-2-yl alkynes containing heteroatoms.

For this research 2-(3-substituted prop-2-ynylthio)benzimidazoles were selected as model reactants in investigation of electrophile induced cyclization reactions. It was found that cyclization went through 6-*exo*-dig path with chosen electrophiles. While, cyclizations with N-(substituted-2-ynyl)-1H-benzo[d]imidazol-2-amines or 2-(pent-2-ynylthio)-1H-benzo[d]imidazoles went through 5-*exo*-dig or 6-*endo*-dig path, depending on the substituent R. More details about selectivity, scope, and limitations of the reaction will be discussed in presentation.

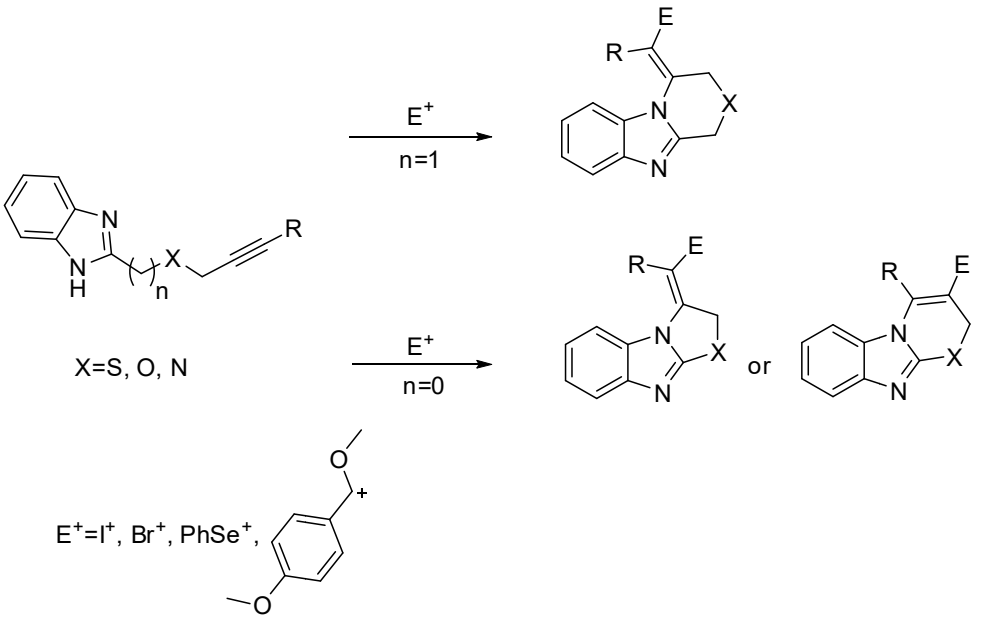

Fig. 1. General scheme of reactions

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