Abstract

In this work, we have synthesized a number of new palladium complexes **18-28** from benzimidazoluim **2-8** and imidazoluim **13-17** salts in good yields, and applied them in the direct arylation reaction for the formation of the C-H bond. This can prove to be an interesting tool from an economic and ecological point of view compared to other types of coupling such as Suzuki, Stille or Negishi. In addition, we prepared the Ag (I) NHC complexes **29-34**.
Subsequently the objective of this work is the evaluation of the biological activity of the original synthesized active compounds. We tested two activities, antibacterial on salts **2-8** and Ag-NHC complexes **29-34**, however, the AChE / BChE anticholinesterase activity was tested on all complexes **18-34**.

Finally, we studied the molecular docking on all the prepared complexes. The experimental information on the inhibitory activities of AChE and BChE showed a satisfactory agreement with the results of the docking.

***Keywords*:** benzimidazole, imidazole, PEPPSI complexes, catalytic activity, carbenes, biological activity, Molecular docking.