

EFFICIENT TWO-STEP SYNTHESIS OF NOVEL IMIDAZOPYRAZOLOOXAZEPINES

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Heterocyclic compounds play a crucial role in medicinal chemistry due to their diverse biological activities and wide therapeutic applications. Among them, imidazole-pyrazole hybrids have attracted considerable interest for their promising neuroprotective or anticancer potential. Despite advancements in this field, efficient and sustainable synthetic methods for these compounds remain scarce.

This study aims to develop a simple and efficient two-step synthesis of imidazopyrazolooxazepine derivatives from pyrazole-4-carbaldehyde and various diamines, followed by cyclization. The study seeks to evaluate the effectiveness of this synthetic approach in terms of yield and reaction selectivity, as well as to assess the potential biological activity of the resulting compounds. The resulting compounds were characterized using NMR, IR, and mass spectrometry to confirm their structures.

The synthesis and separation of imidazopyrazolooxazepines have shown promising results, highlighting the potential of the developed method for preparing these compounds. However, the separation of regioisomers was not fully efficient, indicating the need for further optimization. Future research will focus on improving the synthesis process and investigating the neuroprotective properties of these compounds, with the aim of exploring their potential for neurological therapies.