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Synthesis and Characterization of Some Benzimidazole Derivatives Derived from Pharmaceutical Compounds, and Evaluation of their Antibacterial and Antifungal Activity

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SUMMARY. **The research involves a synthesis of Benzimidazole derivatives from the reaction of orthophenylenediamine or 4-methyl orthophenylenediamine with a number of pharmaceutical compounds containing carboxylic groups in the presence of ammonium chloride as a catalyst, using the microwave irradiation method. The synthesized compounds were diagnosed using Fourier transform- infrared (FTIR), proton nuclear magnetic resonance spectroscopy (H^1-NMR), and Thin-layer chromatography (TLC). Some of the synthesized compounds were tested for antifungal activity against Candida species and antibacterial activity against isolates of Bacillus Puimilus using Nystatin and Neomycin sulfate as reference standard drugs. The results indicate that the synthesized compounds can inhibit the growth of the tested fungi and bacteria.**

RESUMEN. La investigación implica una síntesis de derivados de bencimidazol a partir de la reacción de ortofenilendiamina o 4-metil ortofenilendiamina con una serie de compuestos farmacéuticos que contienen grupos carboxílicos en presencia de cloruro de amonio como catalizador, utilizando el método de irradiación con microondas. Los compuestos sintetizados se diagnosticaron mediante espectroscopia de resonancia magnética nuclear de protones (H^1-NMR) y cromatografía en capa fina (TLC). Se analizó la actividad antifúngica de algunos de los compuestos sintetizados contra especies de Candida y la actividad antibacteriana contra aislamientos de Bacillus Puimilus usando nistatina y sulfato de neomicina como fármacos estándar de referencia. Los resultados indican que los compuestos sintetizados pueden inhibir el crecimiento de los hongos y bacterias probados.

KEY WORDS: benzimidazole, FTIR. fungi and bacteria, pharmaceutical compounds.

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