Synthesis and Antimicrobial Activity of Novel Benzoxazoles

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Z. Naturforsch. 67 c, 466-472 (2012); received October 17, 2011/August 3, 2012

A series of 2-(*p*-substituted-benzyl)-5-[[4-(*p*-chloro/fluoro-phenyl)piperazin-1-yl]acetamido]-benzoxazoles were synthesized in need of new compounds for the fight against microbial pathogens. Their structures were elucidated by spectral techniques. These new derivatives, along with previously synthesized 2-(*p*-substituted-benzyl)-5-substituted-benzoxazoles, were evaluated for their antibacterial and antifungal activities against standard strains and drugresistant isolates in comparison with ampicillin, gentamicin sulfate, ofloxacin, vancomycin, fluconazole, and amphotericin B trihydrate. The minimum inhibitory concentration (MIC) of each compound was determined by a two-fold serial dilution technique. The compounds were found to possess a broad spectrum of antimicrobial activities with MIC values of $32-256 \mu g/ml$. Although standard drugs were more active against the pathogenes employed in this study, the activities of the new benzoxazoles and reference drugs against drug-resistant isolates of the microorganisms were largely similar.

Key words: Benzoxazoles, Antibacterial Activity, Antifungal Activity