Synthesis and antimicrobial estimation of some new substituted purine derivatives

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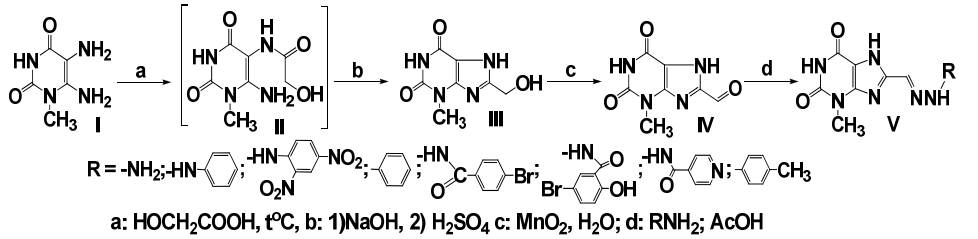
Introduction. The increasing use of antibacterial agents for treatment of nosocomial infections has resulted in the appearance of resistant pathogens. In view of the above mentioned findings and in the search for novel purine derivatives, our work has been focused on design and synthesis of a novel series of 7,8–disubstituted 3–methylpurinedione–2,6 derivatives in order to evaluate their potential as antimicrobial and antifungal agents.

Materials and methods. The synthesis of the 8–substituted purinedione–2,6 derivatives was carried out starting from available 5,6–diamino–1–methylpyrimidine–2,4(1H,3H)–dione.

Results. Synthesis of 8–(hydroxymethyl)–3–methyl–1H–purine–2,6(3H,7H)–dione and its derivatives is shown below in scheme. The procedure proposed by us is quite effective. In most steps, the yield was greater than 80%. The newly obtained purine derivatives were evaluated for their in vitro antibacterial activity against Staphylococcus aureus, Enterobacter aerogenes, E. faecalis, Pseudomonas aeruginosa, Escherichia coli and antifungal activity against Candida albicans.



Conclusion. The recorded results revealed that the tested compounds exhibited promising activity towards the Gram–negative Escherichia coli.

Literature.

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