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Design and evaluation of novel antibacterial agents among benzofuran derivatives

N A Abdel Latif
Taif University, KSA

The present research work describes the synthesis of new heterocyclic compounds using khellinone methyl ether (1) as a starting material. Compound (1) allowed to react with different aldehydes namely, benzaldehyde, p-methoxybenzaldehyde and p-nitro benzaldehyde to give the corresponding chalcones (2a-c). The latter compounds reacted with malononitrile, guanidine, ethylcyanoacetate and ethylacetoacetate to yield cyanopyridine, aminopyrimidine, cyanopyridone and cyclohexenone derivatives (3 a-c), (4a-c), (5a-c) and (6a-c) respectively. When (2a-c) reacted with thiourea, it gave thioxopyrimidine derivatives (7a-c). On the other hand compound (7a-c) condensed with 3-bromopropionic acid or chloroacetic acid to yield thiazinopyrimidine (8a-c) and 3- thiazolo-pyrimidine (9a-c) respectively. Compounds (7a-c) were condensed with chloroacetic acid and aromatic aldehyde to yield the aryl methylene derivatives (10a-c) which could be prepared directly by condensation of compound (7a-c) with aromatic aldehyde. The characterization of the resulting products was confirmed by FTIR, ¹HNMR, MS and elemental analyses. The newly synthesized compounds were screened for their antibacterial activity against *Escherichia coli*, *Pseudomonas aurignosa*, *Salmonella typhimurium*, *Bacillus subtilis* and *Staphylococcus aureus* using the disc diffusion method.

Biography

N A Abdel Latif has completed her PhD at the age of 33 years from Ain Shams University, Cairo, Egypt. She was supervised on 4 MSc theses and 1 PhD. She is an Associate Professor for natural product chemistry since 2008 in Natural Compounds Chemistry Department, Pharmaceutical Industries Division, National Research Center, Dokki, Egypt. Now, she works at Chemistry Department, Faculty of Science, Taif University, Taif, Kingdom of Saudi Arabia (KSA). She has attended a number of conferences in her carrier. She has published more than 20 papers in reputed journals and has been serving as a reviewer for many articles in her specialization. She teaches all the organic courses for the students of Faculty of Science and Faculty of Pharmacy in Egypt and KSA.

nehad_km@yahoo.com