

Cyclocondensation, Characterization and Antibacterial Activities of Novel 5-Chloro-1HIndole-2,3-Dione Derivatives

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Abstract

In our ongoing research to identify effective and simple compounds, we studied the cyclocondensation of 5-Chlorosatin derivatives by the action of Diamino-5-bromo-pyridine to give heterocyclic possessing Pyrido [2,3-b] Pyrazines, in a moderate to good yield. The synthesized products were characterized by ¹H NMR and ¹³C NMR. In addition, the antibacterial properties in vitro were tested against certain microorganisms using the disk diffusion technique. The final results revealed that the majority of the compounds exhibited good antibacterial activity against *Bacillus cereus* and *Staphylococcus aureus*. deposited atop in tandem configuration. Figure as shown below depicts the evidence of Si-NPys of Si-NWs growth using Si wafer as initial materials. It is noteworthy to mention that the dimension of such silicon nanostructures depends on experimental conditions such as temperature, precursor concentration, etching time etc. FDTD simulation suggested confined exciton generation rate distribution in such nanometric structures and thus active absorbing material such as perovskite would get enormous influence thereof. Authors acknowledge CoRERE, RI, KFUPM, Dhahran 31261, Saudi Arabia. MKH acknowledges Deanship of Scientific Research (DSR) at King Fahd University of Petroleum & Minerals (KFUPM) for funding this work through project No. IN151003.

Achieving metabolomic data with satisfactory coverage is a formidable challenge in metabolomics because metabolites are a chemically highly diverse group of compounds. The knowledge concerning the behavior of these Bacilli as antagonists and metabolite analysis is essential for their effective use and the commercialization. The present study was focused on selection of best biocontrol antifungal *Bacillus* strain against aflatoxin producing *Aspergillus* by antagonism on PDA medium. About 16 different strains of bacteria were isolated from healthy and infested rhizosphere of groundnut using N-agar medium. The isolates were identified based on morphological and microscopic characters. Bacterial isolate JND-KHGn- 29-A and JND-KSGn-30-L were recorded to be a best antagonist as of its ability to inhibit most toxic fungus *A. flavus* JAM-JKB-BHA-GG20 (58.20%) after screening with 16 *Bacillus* isolates. GCMS analysis of best and least bacterial antagonist *Bacillus subtilis* (JND-KHGn-29-A, Accession KU984480) inoculated onto N-agar medium identified total 55 and 42 compounds respectively. Whereas GCMS analysis from best bacterial antagonist *Pseudomonas* isolate no. 14 (JNDKSGn-30-L) inoculated onto N-agar identified total 60 compounds.