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Synthesis, characterization, in vitro biological evaluation of a series of benzothiazole-amides as antibacterial agents

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A group of benzothiazole-amide derivatives (VH01-06) were conventionally synthesised in using modified reaction conditions of the Schotten-Baumann named reaction, all the synthesised compounds were characterised using physical methods such as Thin-layer chromatography to determine the retention factor and melting point. All the chemical structure of the compounds were consistently with the spectral data obtained for FT-IR, ^1H & ^{13}C NMR and HRMS ESI-Mass spectroscopic techniques. These compounds were further exposed to in vitro antibacterial activity screening various strains includes gram-positive bacteria (Methicillin-resistant *Staphylococcus aureus* (MRSA) ATCC 3359 and Methicillin-sensitive *Staphylococcus aureus* (MSSA) ATCC 2592 and gram-negative bacteria (*Escherichia coli* J53 R1, *Escherichia coli* ATCC 25922, *Klebsiella pneumoniae* ATCC 10031 and *Klebsiella pneumoniae* BAA-1075). Based on the screening results, the benzothiazole compounds were appeared to be active at $100\mu\text{M}$ concentration. However, one compound reported as active against *E. coli* ATCC 25923 at $200\mu\text{g/mL}$.

Biography

Hadyah Mohammed Alazmaa is currently a Master of Science (MSc) student specializing in Molecular Medicine at the School of Postgraduate Studies, International Medical University (IMU), Kuala Lumpur, Malaysia. Her academic journey at IMU is rooted in a passion for advancing medical knowledge and understanding complex molecular mechanisms that underpin health and disease. Through her studies, Hadyah has gained expertise in molecular biology techniques and biomedical research, equipping her with valuable insights into the molecular basis of various medical conditions. Her dedication to the field highlights her commitment to contributing to innovative research and scientific breakthroughs in molecular medicine.