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Interaction of conessine with resistance-nodulation-division efflux pumps in multidrug-resistant *Pseudomonas aeruginosa* assessed by Hoechst 33342 accumulations

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Pseudomonas aeruginosa infections have become increasingly difficult to treat due to intrinsic antibiotic resistance. Overexpression of resistance-nodulation-division (RND) efflux pumps such as MexAB-OprM, MexXY-OprM, MexCD-OprJ, and MexEF-OprN in the pathogen is detected in clinical isolates and contributes to worrying multidrug resistance (MDR) phenotypes. A number of efflux pump inhibitors have been used to restore susceptibility to antibiotics for treating MDR organisms. This study was aimed to determine a steroidal alkaloid compound, conessine as an efflux pump inhibitor against MDR *P. aeruginosa* strains by measuring the accumulation of a fluorescent dye, Hoechst 33342. Increase in the accumulation of H33342 after treatment with conessine against *P. aeruginosa* strains was observed indicating that conessine could inhibit efflux pump systems in the pathogen. The finding suggested that conessine might be a potent efflux pump inhibitor with possible utility as an adjunctive therapeutic agent for the treatment of Gram-negative bacterial infections.

Biography

Thanyaluck Siriyong is an Assistant Researcher at the University of St. Andrews, Scotland, UK. She has completed her PhD in Microbiology from Prince of Songkla University, Thailand and received her BSc and MSc in Thai Traditional Medicine from Prince of Songkla University. This work was supported by the Thailand Research Fund through the Royal Golden Jubilee PhD Program co-funded by the British Council through Newton Fund.

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