Antibacterial activity of flavokawain B and its heterocyclic derivatives
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Abstract: Flavokawain B and its heterocyclic chalcone derivatives 1, 2 and 3 were prepared by Claisen-Schmidt condensation reaction under basic conditions between xanthoxyline and four aromatic aldehydes. The yields of these reactions were low to moderate (8.7-62.0%). Antibacterial activities of these chalcones at concentration of 3 mg/mL on both gram positive and gram negative bacteria namely Staphylococcus aureus ATCC 25923, Bacillus subtilis ATCC 6633, Escherichia coli ATCC 25922 and Pseudomonas aeruginosa ATCC 27853 were investigated by Agar Well Diffusion method. It was revealed that only flavokawain B showed the antibacterial activity against P. aeruginosa with the clear zone of 10 cm. Furthermore, chalcone 1 was transformed to flavone 4 by a cyclisation reaction using iodine as a catalyst. This flavone was then evaluated for the antibacterial activities and it displayed no inhibitory effect at the tested concentration.

Keywords: Flavokawain B; Heterocyclic chalcones; Flavone; Antibacterial