Synthesized and Antibacterial Activity of Derivatives 7-Chloro-4-hydroxy-2-oxo-2H-chromene-3-carbaldehyde

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Abstract: In present paper, we report the organic syntheses of four compounds from 7-Chloro-4-hydroxy-2-oxo-2H-chromene-3-carbaldehyde and describe the results of antibacterial activity of purified compounds. Compounds 4,7-Dichloro-2-oxo-2H-chromene-3-carbaldehyde (1a), 4,7-Bis-(3-hydroxy-propylamino)-2-oxo-2H-chromene-3-carbaldehyde (2a), [4,7-Bis-(3-hydroxy-propylamino)-2-oxo-2H-chromen-3-ylmethylene]-amino]-acetic acid (3a), [(2-Oxo-4,7-bis-(3-oxo-propylamino)-2H-chromen-3-ylmethylene]-amino]-acetic acid (4a), 2-Amino-4-{4-[3-amino-3-carboxy-propylamino]-3-(carbamoylmethylamino)-methyl]-2-oxo-2H-chromen-7-ylamino]- butyric acid (5a), have been synthesized and characterized using melting points, IR spectra, 1H-NMR and 13C-NMR spectra. The antibacterial activity of synthesized compounds and streptomycin and cefalexine at concentrations of 2mg/ml, 3mg/ml and 5mg/ml, have been evaluated against three strains of bacterial culture; Staphylococcus aureus, E. coli and Bacillus cereus. The compounds show bacteriostatic and bactericidal activity.

Keywords: Coumarine derivatives, antibacterial activity, IR, 1H-NMR, 13C-NMR, Streptomycin.