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Synthesis of methyl (E)-2',4"-thiazachalcones and their N-alkyl derivatives, photochemistry with theoretical calculations and antimicrobial activities

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Abstract: A series of 9 new (E)-thiazachalcones (1-3), and their N-alkyl substituted derivatives (4-6), and stereoselective dimerization products (7-9) were synthesized, then tested for antimicrobial activity against all test microorganisms except *Pseudomonas aeruginosa*. The new compounds (1-6) without dimerization products (7-9) showed good antimicrobial property against *Staphylococcus aureus*, *Listeria monocitogenes*, and *Enterococcus faecalis*. The possible dimerization products of compounds (1-3) were calculated theoretically. Experimental and theoretical calculation showed that δ -truxinic type dimer is the most stable isomer.

Key Words: Thiazachalcones, N-decyl-4-thiazaclaonium bromide, photodimerization, antimicrobial activity.

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