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## Microwave-Assisted Synthesis of 1,4'-Diazaflavone and N-Alkyl Derivative Pigments with Anti-Microbial Activity

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**Abstract:** 1,4'-Diazaflavone pigment (2) was synthesized by a simple environmentally friendly microwave-assisted one-pot method for the cyclization of 2'-amino (E)-4''-aza-chalcone (1) under solventless conditions using K-10 clay. In addition, 10 new N-alkyl (C<sub>5-12</sub>, 14-15) substituted 1,4' -diazaflovanium bromide pigments (3-12) were prepared from compound 2 or directly from compound 1, with corresponding alkyl halides in acetonitrile under reflux. The anti-microbial activity of compounds 1-12 was tested. The N-alkyl substituted 1,4' -diazaflovanium bromides (3-12) showed good antimicrobial activity against the gram-positive bacteria tested with minimal bactericidal concentration (MBC) values for the reference antibiotic kanamycin. The optimum length of the alkyl chain for better and broader activity was 6-10 carbon atoms in the series of compounds (3-12).

**Key Words:** Microwave-assisted, aza-chalcone, 1,4' -diazaflovanone, N-alkyl-1,4' -diazaflovanium bromide, anti-microbial activity, pigment (3-12).

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