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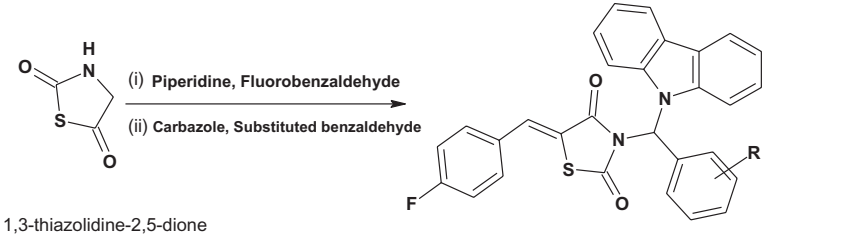
Synthesis and Antibacterial Activity of Carbazole and Fluorobenzylidene Substituted Thiazolidine-2,5-diones

Nitin Kumar[1]*, Devender Pathak[2]

[1]Department of Pharmaceutical Chemistry, SGT College of Pharmacy, SGT University, Gurugram, Haryana, India
[2]Department of Pharmaceutical Chemistry, Pharmacy College, Uttar Pradesh University of Medical Sciences, Etawah, Uttar Pradesh, India

ABSTRACT Thizolidine-2,4-dione on reaction with *p*-fluorobenzaldehyde in the presence of piperidine and toluene gave (*Z*)-5-(4-fluorobenzylidine)thiazolidin-2,4-dione (**1**), which on reaction with carbazole and substituted benzaldehydes in the presence of ethanol yielded (*Z*)-5-(4-fluorobenzylidene)-3-[(9*H*-carbazole-9-yl) (2-substituted phenyl)methyl]thiazolidine-2,4-diones **(2a-2j)**. These compounds were screened for their antibacterial activity against Gram-positive bacterial strains such as *Bacillus subtilis and Staphylococcus aureus* as well as Gram-negative bacterial strains such as *Escherichia coli* and *Pseudomonas aeruginosa.* Among the tested compounds **2c** and **2d** showed significant activity against Gram-positive bacterial strains, and compound **2g** was found to be most active against Gram-negative bacterial strains.



1,3-thiazolidine-2,5-dione

(Z)-5-(4-fluorobenzylidene)-3-[(9*H*-carbazole-9-yl) (2-substituted phenyl)methyl]thiazolidine-2,4-diones

KEYWORDS: Thiazolidine, Carbazole, Antibacterial activity, Disc diffusion method, Mannich reaction