

**SYNTHESIS AND BIO-ACTIVITY STUDIES OF UREA/ THIOUREA
DERIVATIVES OF 4,4'-DIAMINO BIPHENYL METHANE**

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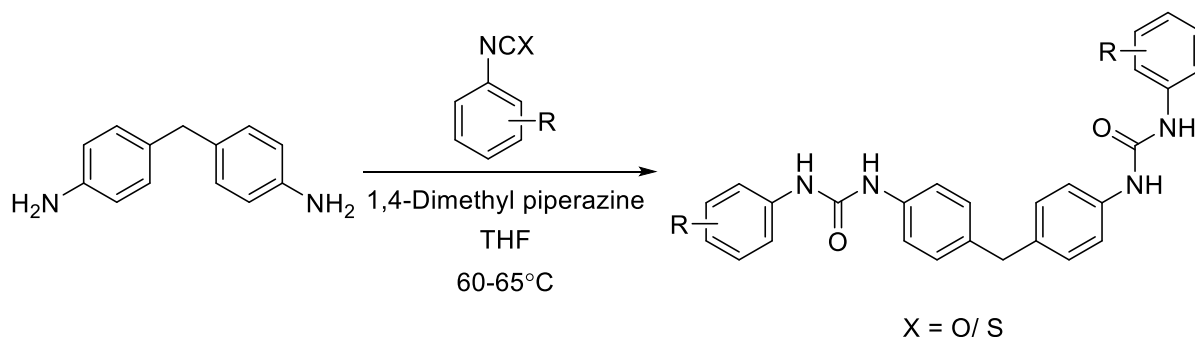
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The title compounds urea/ thiourea derivatives of 4,4'-diamino biphenyl methane were synthesized from the reaction of 4,4'-methylenedianiline with some aryl isocyanates and aryl isothiocyanates in the presence of 1,4-dimethyl piperazine catalyst and obtained the products with 80-91% yields. The structures of all the newly synthesized urea/ thiourea derivatives were confirmed by spectral (IR, ¹H, ¹³C NMR & MS) and analytical studies.



Scheme 1: Synthesis of urea/thiourea derivatives of 4,4'-methylene dianiline

The synthesized compounds were screened for their antibacterial activity against *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli* and *Klebsiella pneumoniae*; and antifungal activity against *Candida albicans* and *Candida nonalbicans fungi*. In conclusion, it is identified that some compounds have shown significant antibacterial activity due to the presence of fluoro and nitro groups substituted on the synthesized compounds. Similarly, it is identified that some compounds have shown significant antifungal activity due to the presence of chloro, fluoro and nitro groups substituted on the synthesized compounds.