

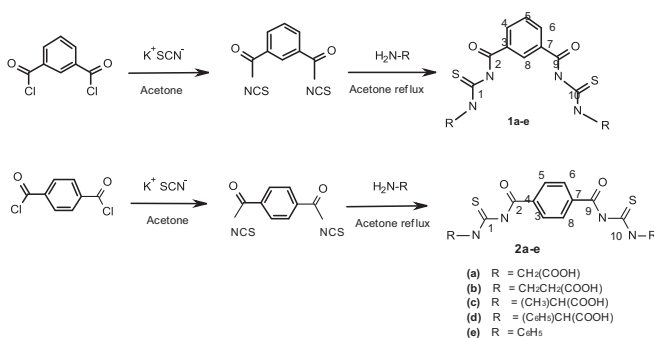
## BIS-THIOUREA BEARING ARYL AND AMINO ACIDS SIDE CHAINS AND THEIR ANTIBACTERIAL ACTIVITIES

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### GRAPHICAL ABSTRACT



**Abstract** A series of symmetrical 1,3-bis thiourea **1a–e** and 1,4-bis thiourea derivatives **2a–e** have been successfully synthesized from the reactions of amines with 3-acetylbenzoyl isothiocyanate and 4-acetylbenzoyl isothiocyanate, respectively. All the synthesized compounds were characterized by FT-IR spectroscopy and <sup>1</sup>H and <sup>13</sup>C NMR spectroscopy. The compounds were screened for their antibacterial activity by turbidimetric method using gram-negative bacteria (*E. coli* ATCC 8739) using turbidimetric method. The newly synthesized bis-thiourea derivatives bearing aryl side chains showed good antibacterial activity against *E. coli*. The effect of the molecular structure of the synthesized compounds on the antibacterial activity is discussed.

**Keywords** Antibacterial activity; amino acid; bis-thiourea

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