Bacteriostatic activities of *N*-substituted tris-thioureas bearing amino acid and aniline substituents

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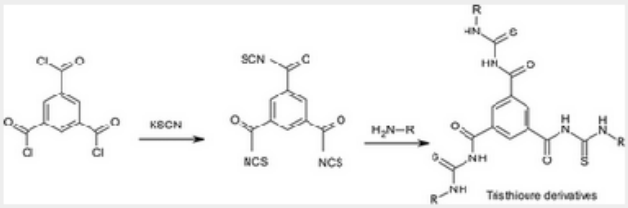
GRAPHICAL ABSTRACT



A series of tri-substituted thiourea derivatives were synthesized by the reaction of 1,3,5-triacetylbenzoyl isothiocyanate with aminoacids and aniline derivatives. All thiourea derivatives were characterized by FT-IR, ^{1}H and ^{13}C NMR spectroscopy. Antibacterial activities against wild-type *Escherichia coli* American Type Culture Collection 8739 were determined by use of the turbidimetric methodto evaluate the effect of varying amino groups on the synthesized thioureas. Tris-thiourea derivatives bearing *ortho*-chloroaryl substituents showed excellent antibacterial activity against *E. coli* with minimal inhibitory concentration (MIC) of 96 ppm. The optimum inhibition was dependent on the type of amines and the position of the halogen in aniline.

KEYWORDS: Antibacterial activity, amino acid, tris-thiourea