ABSTRACT

Synthesis and Evaluation of *N*-Substituted Aminobenzothiazoles as Anti-Tubercular Agents

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This dissertation examines the tuberculosis epidemic, its cause, nature and management with respect to the class of organic compounds used in its treatment. Various drug classes - quinolones, oxazolidinones, nitroimidazole and benzothiazoles were explored as anti-TB agents. Benzothiazoles, being an incredible pharmacophore, are much less researched for anti-tubercular activity and hence they were chosen for our project. This study focuses on the synthesis of novel 2-aminobenzothiazole derivatives aimed to target MTB H_{37}Rv. These new derivatives were characterised by modern analytical techniques. Minimum inhibitory concentration (MIC) data of preliminary 2-aminobenzothiazoles was promising against TB which led to the designing and synthesis of new 2-aminobenzothiazoles. These benzothiazoles were prepared by treating substituted amines with isothiocyanates to obtain thioureas which were cyclised to afford 2-aminobenzothiazoles. These 2-aminobenzothiazoles may target either DPrE1 (decaprenylphosphoryl-β-D-ribofuranose 2′ epimerase) or shikimate kinase.

Keywords: Tuberculosis; aminobenzothiazoles; synthesis; DPrE1; shikimate kinase.