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In vitro Studies on Antimycobacterial and Efflux Pump Inhibition of C. roseus and P. nigrum against Clinical Isolates of Ofloxacin Resistant M. tuberculosis

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Abstract : Antimycobacterial activity of C. roseus rosea and piperine was evaluated against ofloxacin resistant M. tuberculosis. Among the 68 suspected sputum samples, 32 were AFB positive belongs to age group of 40-50years. Susceptibility of M. tuberculosis was evaluated against ofloxacin and streptomycin by colorimetric assay. Of these 32 positive samples, 20 isolates were resistant to ofloxacin, 12 were resistant to Streptomycin and none of them were found to be multidrug resistant. The sensitivity pattern of ofloxacin resistant M. tuberculosis against two tested plant extracts showed potent tubercular activity. Antimycobacterial activity of C. roseus was 22 + 2.21mm and piperine was found to be 20 + 1.08 mm. The percentage of relative inhibitory zone of C. roseus was 133 % and piperine was found to be 111 %. The MIC of C. roseus and piperine was found at 50 µg/ml. Based on the FICI value 0.37 confirms that both the tested phytochemicals were synergistically active against M. tuberculosis. The MIC of ofloxacin was reduced from 8 mg to 2 mg/l in the presence of piperine but not by C. roseus. This is the first report on Synergistic bioactivity of C. roseus rosea and piperine fractionation leads development of novel antimycobacterial prophylaxis in future.

Keywords : C. roseus, ofloxacin, piperine, synergistic
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