Research in Pharmaceutical Sciences, 2012;7(5)
School of Pharmacy and Pharmaceutical Sciences
Isfahan University of Medical Sciences

Synthesis and characterization of hydrazide-hydrazone derivatives of 3-pyridine carboxylic acid as antimycobacterial tuberculosis agents

H. Adibi[1], S. Zaker[2], A. Monkaresi[1,*]

[1]Department of Medicinal Chemistry, Faculty of Pharmacy, Kermanshah University of Medical Sciences, Kermanshah, Iran
[2]Department of Biology and Microbiology, Faculty of Biology and Microbiology, Parand Azad University, tehran, iran

Background and Aims: The purpose of this study was to prepare various nicotinoyl hydrazones derivatives by introducing the nicotinic acid hydrazide pharmacophore into several molecules and screening for antimycobacterial activity.
Methods: Benzaldehyde derivatives react with nicotinic acid hydrazide to form nicotinoyl hydrazones. The synthesized compounds were screened against *M. tuberculosis* H37Rv, clinical isolates of *M. tuberculosis* and MDR clinical isolates of *M. tuberculosis* using the proportion test.
Results: The minimum inhibitory concentration (MIC) of N`-(4-Methyl phenyl) nicotinic acid hydrazone and N`-(4-(N,N-dimethyl) phenyl) nicotinic acid hydrazone exhibited activity between 40 and 100 µg/ml and could be a good start point to find new lead compounds against *M. tuberculosis*.
Conclusions: The antimicrobial activity of the two new series described here suggests that they may be selectively targeted to *M. tuberculosis* growths. They were effective in inhibiting *M. tuberculosis* infection at 40.0 µg/ml concentrations, and could be a good start point to further studies.

Keywords: Antimycobacterial; Nicotinic acid hydrazone; Proportion test