SALIENT FINDINGS

- Clinical isolates of *M. tuberculosis* belonging to genotypic families prevalent in India showed better humoral and cell mediated immune response than laboratory strain H_{37}Rv.
- Out of 32 differentially/over-expressed protein spots we identified 18 protein spots by MALDI-TOF mass spectrometry in prevalent clinical isolates of *M. tuberculosis*.
- Among 32 differentially expressed proteins thirteen were found to be sero-reactive and identified by MALDI-TOF mass spectrometry.
- By pooling the differentially expressed and sero-reactive proteins a total of twenty proteins were identified by MALDI-TOF mass spectrometry.
- In addition to twenty proteins four more proteins were selected from database for bioinformatics prediction of T-cell and B-cell epitopes in these proteins.
- Out of twenty four proteins, T-cell peptides of six proteins (Rv2901c, Rv0635, Rv0512, Rv1791, Rv3020c and Rv2588c) showed better Th1 type of immune response in pulmonary TB patients and could be used diagnostic marker.
- T-cell peptides of two proteins (Rv2901c and Rv1791) showed stronger Th1 type of immune response in healthy household contacts than patients and could be used as possible subunit vaccine candidates.
- B-cell peptides of four proteins (Rv2901c, Rv0635, Rv1791, and Rv2588c) showed better antibody reactivity with pulmonary TB patient’s sera and could be used as sero-diagnostic candidate(s).
- Overall, this study has led to identification of six proteins (Rv2901c, Rv0635, Rv0512, Rv1791, Rv3020c and Rv2588c) which have potential as candidates for developing subunit vaccine and improved T cell/ B cell based diagnostic reagents.