

## **APPLICATION OF MYCOBACTERIAL PROTEOMICS TO BCG-VACCINE PRODUCTION QUALITY CONTROL**

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Bacille Calmette-Guerin (BCG) is currently the only available vaccine against tuberculosis. In Brazil the strain used for vaccine production is BCG Moreau-RDJ. Details about the evolution of the Moreau strain when compared to the reference strain, BCG-Pasteur, will contribute to the elucidation of mechanisms underlying the differential immune response and the variable effectiveness of these vaccines. One group of proteins of pressing importance is the exported/secreted proteins, given their dominant immunogenicity and role in pathogenesis. The comparative proteome profile of *M.bovis*-BCG, Moreau and Pasteur culture supernatant proteins, obtained in different production media shows that both strains express approximately the same number of protein spots, concentrated in the pH range of 3-8. Detailed analysis using pH ranges 3-6 and 5-8, revealed quantitative and qualitative differences when we compare the same strain cultivated in distinct media as well as different strains under the same growth conditions used for vaccine production. The identification of these differential spots by mass spectrometry is supplying a detailed analysis of the secreted protein pattern, thus allowing the identification of useful markers for quality control of the production BCG-Moreau vaccine, also contributing to the development of improved vaccines. Keywords: Proteomics, BCG-vaccine, mass spectrometry and secreted proteins. Acknowledgments: PDTIS/FIOCRUZ, TDR/WHO