

# **Understanding the complexity of host response in cryptococcal meningitis, toxoplasma encephalitis and tuberculous meningitis in HIV infected individuals**

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## **Abstract**

Neuro infections remains to be one of the most fatal complications in HIV infected individuals. Most common neuro infections observed in HIV infected individuals in India are cryptococcal meningitis, toxoplasma encephalitis and tuberculous meningitis. Overlapping clinical representation and brain imaging profile makes differentiation between these three neuro infections a challenging task. In this study, we have made an attempt to analyze altered proteome from frontal lobe brain samples of HIV infected individuals co-infected with cryptococcal meningitis, toxoplasma encephalitis or tuberculous meningitis using 4-plex iTRAQ quantitative proteomics and high-resolution mass spectrometry. It has resulted in identification of a total of 3,541 proteins of which 526, 623 and 696 were found to be differentially expressed in HIV infected individuals co-infected cryptococcal meningitis, toxoplasma encephalitis and tuberculous meningitis, respectively. Out of the differentially identified proteins; 94, 102 and 196 were unique differentially expressed proteins in brain sample of HIV infected individuals co-infected with cryptococcal meningitis, toxoplasma encephalitis and tuberculous meningitis respectively. We have validated the expression of three of these proteins, HLA-B, PRELP and TF by immunohistochemistry. This study will provide insight into pathogenesis and it might lead to identification of potential biomarkers for differential diagnosis of cryptococcal meningitis, toxoplasma encephalitis and tuberculous meningitis in HIV infected individuals.

## **Biography**

Apeksha Sahu is a PhD student at the Institute of Bioinformatics, Bangalore. She has obtained her MSc degree in Microbiology from Nagpur University.

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