## **ORIGINAL ARTICLE**

## SERO-PREVALENCE OF MAJOR FUNGAL ALLERGEN 'ASP F 3' IN INDIAN POPULATION: POSSIBILITY FOR AN IMMUNODIAGONOSTIC MARKER ANTIGEN

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Abstract: The prevalence of allergic disorders due to fungal exposure has been rising significantly, throughout the globe. However, when compared to pollen or food allergens, there is a scarcity of molecular studies focusing on fungal allergens. Aspergillus fumigatus is a common airborne fungus that can cause serious infections in immunocompromised individuals in terms of respiratory allergy, asthma, invasive aspergillosis (IA) and allergic bronchopulmonary aspergillosis (ABPA), etc. Environmental surveys indicate that ubiquitous spores of A. fumigatus are getting constantly inhaled by people all around. As a consequence, disease occurs predominantly in the lungs, although dissemination to virtually any organ may occur in the severely predisposed people. The Asp f 3, is an immunoglobulin E (IgE) reactive allergenic protein, having an important role in the pathogenesis of ABPA and IA, both of which affect the respiratory system. The present study aims to understand the sero-prevalence of major fungal allergen Asp f 3 in Indian population.

For this, the Asp f 3 cloned 'pBBL-TEV' vector was transformed into chemically competent E. coli cells, leading to overexpression. The recombinant protein was isolated and purified by Ni-NTA chromatography. The extracted Asp f 3 protein sample was run through Sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS PAGE) and its IgE reactivity was studied by immunoblotting. The IgE- binding strength of Asp f 3 is comparable to that of Asp f 1, which has already been established as a major allergen, suggesting that rAsp f 3 as a major fungal allergen in the context of Indian population.

**Keywords**: Fungal allergen, *Aspergillus fumigatus*, recombinant Asp f 1, IgE-reactivity, sero-prevalence, Indian population.