AFuPEPLISA Immunodiagnostic Kits for Detection of *Aspergillus fumigatus* in Sera of Patients with Bronchial Asthma and Pulmonary Tuberculosis

Technology ID: PM-TT-IM-2025-Apr-1
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Technology Domain: Diagnostics
Disease Area (Broad):
Communicable Diseases (bacterial, viral, fungal, parasitic) - Influenza & other respiratory Infection.

Need and utility of the Technology from Public health perspective:

Aspergillus fumigatus complicates bronchial asthma and pulmonary tuberculosis, with elevated IgE and IgG levels aiding in serodiagnosis. Early detection is crucial to prevent bronchiectasis and fibrosis. Current diagnostic tests like ImmunoCAP, Immulite 2000, and Platellia Aspergillus IgG ELISA show variable sensitivity due to differences in antigen quality, assay matrices, and immobilization methods, leading to inconsistent results across platforms.

Technology Readiness level (TRL):

- Technology has been successfully validated, independently at three sites.
- Technology Readiness level- 6
- GMP finalized
- The technology is ready to transfer for commercialization.

Validation Status and outcome:

The kits were independently validated for bronchial asthma samples n=1307, wherein at PGIMER, Delhi n=1131 and at VPCI, Delhi it was n=176. Additionally, for suspected pulmonary TB samples, RBIPMT, Delhi tested it for n=254. The assays showed an agreement of 68.65% with ImmunoCAP demonstrating a good concordance. A total of 82 (32.3%) cases were positive for A. fumigatus specific antibodies

Market Potential:

The AFuPEPLISA Immunodiagnostic Kit presents a strong market potential in the early detection of Aspergillus fumigatus among patients with bronchial asthma and pulmonary tuberculosis—conditions that are increasingly prevalent in developing regions. With current diagnostic tools showing inconsistent performance, AFuPEPLISA stands out due to its synthetic-peptide based design, high sensitivity and specificity, and low intra- and inter-assay variation. Its cost-effectiveness, long shelf life, and suitability for use in sub-district and district hospital labs make it ideal for widespread deployment. As awareness of fungal complications grows and healthcare systems seek reliable, scalable solutions, this technology offers a timely and commercially viable opportunity .

Publication: NA

IP Filing:

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