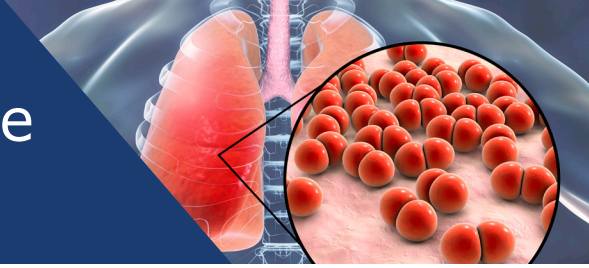
Advancing Pneumococcal Vaccine Testing with Multiplexed Assays



Overview

In 2024, *Clinical Immunology* published a study by ARUP Laboratories, a nationally recognized reference laboratory, validating a **23-serotype multiplexed pneumococcal assay** (comprised of a 14-Plex and 9-Plex kit) developed by Quansys Biosciences in collaboration with ARUP.

The study demonstrates a **faster, more accurate, and more accessible** approach to pneumococcal vaccine response testing. This assay provides a ready-to-use alternative to the complexity, cost, and variability of existing multiplex solutions.

Key Findings

96% **96.2%** showed sufficient immune response to at least 70% of serotypes

Successfully measured responses to multiple pneumococcal vaccines

Identified **B cell deficiencies** through atypical or absent responses

Download the Study

To download the full study, scan the QR code.

Benefits

1. Faster and more cost-effective than bead-based methods
2. Consistent, reproducible results with lot-to-lot reliability
3. Supports personalized patient care through targeted immune profiling

The Challenge

Before the Quansys 23-Serotype Pneumococcal Multiplexed Assay, most reference labs relied on in-house, bead-based multiplex assays such as Luminex® for pneumococcal antibody testing. The *Clinical Immunology* study highlights several drawbacks:

- **In-House Development Required** – No commercial multiplex kits existed, forcing labs to source, modify, conjugate, and validate their own assays.
- **High Cost and Complexity** – Specialized reagents, licensing fees, and complex workflows increased per-test costs.
- **Lot-to-Lot Variability** – Chemical conjugation steps introduced performance shifts between batches, requiring re-validation.
- **Technical Limitations** – Antigen modification can alter epitopes, and bead handling can lead to clumping and inconsistent results.

The Quansys Solution

Developed in collaboration with ARUP Laboratories, the Quansys 23-Serotype Pneumococcal Multiplexed Assay eliminates the need for in-house assay development and overcomes the limitations of bead-based systems.

- **Ready-to-Use and Clinically Validated** – Validated to CLSI guidelines and calibrated to WHO reference material.
- **Plate-Based Format** – Simplifies workflow and avoids bead-related issues such as clumping or signal variability.
- **Consistent Performance** – Proprietary CWPS + CWPS2 diluent formulation reduces cross-reactivity and ensures lot-to-lot consistency.
- **Full Immune Profiling** – Simultaneous, high-precision measurement of all 23 pneumococcal serotypes from a single sample.

Conclusion

The Quansys–ARUP collaboration produced the **first ready-to-use, clinically validated, 23-serotype multiplexed pneumococcal assay**. This innovation enables laboratories to test more efficiently and allows clinicians to assess immune responses with greater confidence.

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ARUP LABORATORIES

QUANSYS BIOSCIENCES

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