

How to determine vaccine efficacy with standardized and validated immunogenicity assays



Apples to oranges

There is no easy way to benchmark immunogenic responses – and that’s a problem when comparing the effectiveness of candidate vaccines.

Apples to apples

Calibrating assays to international standards compares like to like, so that immunogenicity results from different assays or laboratories can be analyzed, apples to apples.

Many methods to bridge candidate vaccines are often difficult and time-intensive – so it’s important to find an assay calibration and quantitative comparison process that’s not.

PPD™ Laboratory services scientists, part of Thermo Fisher Scientific, have the vaccine development expertise to move vaccines forward by developing and testing new approaches to traditional techniques.

Accelerated development and the comparability of vaccine efficacy

If researchers could easily compare the efficacy of candidate vaccines, this bridging would accelerate vaccine development and improve the availability of multiple vaccines globally.

Assays studied



Viral microneutralization (MNT)

Quantifies anti-SARS-CoV-2 spike protein-neutralizing antibodies in human serum using a reference standard



Meso scale discovery’s multiplex electrochemiluminescence (MSD ECL)

Quantifies immunoglobulin G (IgG) antibodies to SARS-CoV-2 spike, nucleocapsid, and receptor-binding domain (RBD) proteins



Both assays:

- Are calibrated to the World Health Organization international standard
- Are highly precise and accurate
- Demonstrate high specificity for the SARS-CoV-2 antigens or virus tested
- Exhibit no significant cross-reactivity with seasonal coronaviruses



Upsetting the apple cart

We have a long history of surpassing the status quo in vaccine development. Our expertise and excellence have enabled vaccine developers to stand at the forefront of new immunogenic methodologies and approaches for decades, and this new research is no exception.

Our scientists found that quantitative assays, when calibrated to an international standard, offer an improved approach for comparing immune responses of different vaccines or regimens. While other methods exist, our team’s approach streamlines and simplifies the process so researchers can compare vaccine efficacy, apples to apples, without any unnecessary steps.

Check out our peer-reviewed assay research and learn how our experts can simplify your next vaccine development project.

Learn more at thermofisher.com/ppd