

# INNOVATIONS IN COVID-19

Bridging opportunities  
at Oswaldo Cruz Institute

## IMPLEMENTATION OF ANTI-SARS-COV-2 NEUTRALIZING ANTIBODY QUANTIFICATION TECHNOLOGY BY PSEUDOVIRUS-BASED ASSAY (COD. 2021.002)

### COORDINATOR

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### RESEARCH AREA

Diagnostics

### DEVELOPMENT STAGE

Level 4 - TRL - Component and/or breadboard validation in laboratory environment.  
MRL - Capability to produce the technology in a laboratory environment.

### PROPOSITION / APPLICATION

Pseudoviruses are a safe tool for manipulation in biosafety level 2 laboratories as they have a single infection cycle. They can be used in anti-SARS-CoV-2 neutralizing antibody quantification assays or in infection-inhibiting drug evaluation tests. Through this methodology, infection is quantified by luminescence by measuring the luciferase activity, which is directly proportional to the number of infectious particles present in the initial inoculum thus allowing for accuracy, sensitivity, and reproducibility of the test.

### INNOVATION

The present approach proposes the use of pseudovirus as a safe tool for manipulation in biosafety level 2 laboratories since it does not use biosafety risk 3 pathogenic viruses. This technique appears to be more advantageous compared to the conventional methodology used. The incorporation of standardized assays that do not use the pathogenic viral isolate as a tool facilitates the expansion of tests and are urgently needed to evaluate new antiviral products in pre-clinical and clinical stages, in addition to enabling the evaluation of the protective immune response between patients with COVID-19 as well as the protection dynamics between convalescents and vaccinated.

### OPPORTUNITY

Implementation of the pseudovirus test makes it possible to leverage serological tests for neutralization and screening of new drugs

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