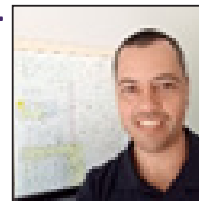


## Ultra-fast, high throughput and inexpensive detection of SARS-CoV-2 seroconversion

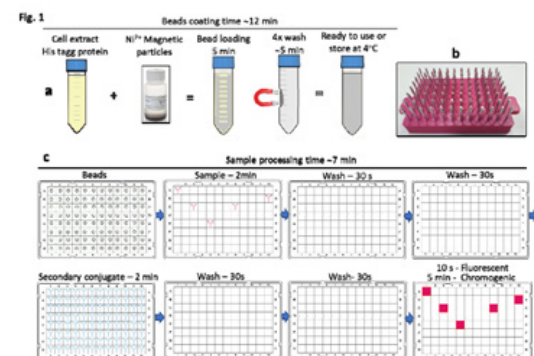
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### Abstract

Immunological assays are important tools to detect previous infections by pathological agents such as SARS-CoV-2. Furthermore, immunological assays are important to track humoral response to vaccination. Here we describe a simple, inexpensive, high throughput and ultrafast nickel magnetic bead-based immunoassay which allows rapid, inexpensive and scalable detection of human antibodies against SARS-CoV-2 using serum or blood. We show that the method is readily adaptable to use different 6xHis tagged SARS-CoV-2 antigens and operate with performances superior to classic ELISA though requiring only a fraction of consumables, instrumentation, time to deliver results and volume of sample. The results can be visually interpreted without compromising accuracy as demonstrated by validation at a point of care unit. The magnetic bead ELISA can be implemented in high throughput formats to fast track COVID-19 cases and humoral response to SARS-CoV-2 vaccines.



### Biography

Luciano F. Huergo studied biology for his undergraduate degree at the Universidade Federal do Paraná, Brazil and obtained his PhD in biochemistry at the Universidade Federal do Paraná in 2006. Since 2008, he has been a professor at Universidade Federal do Paraná. He worked as a visiting scientist at John Innes Centre UK (2005), Griffith University, Australia (2013) and Tübingen University, Germany (2018). He is current a fellow of the Alexandre von Humboldt foundation. The major focus of his current research is the regulation of bacterial metabolism, microbial biodiversity analysis and development of novel immunological assays.