



Maximize T cell immune response research insights

QuantiFERON® SARS-CoV-2 RUO

Fighting COVID-19 begins with research

To control the pandemic, we must first understand and control the infection. Exploration of immune response markers in SARS-CoV-2 infections is emerging as the next research tool as T cells are becoming increasingly recognized for their role in COVID-19 immunity (1–4).

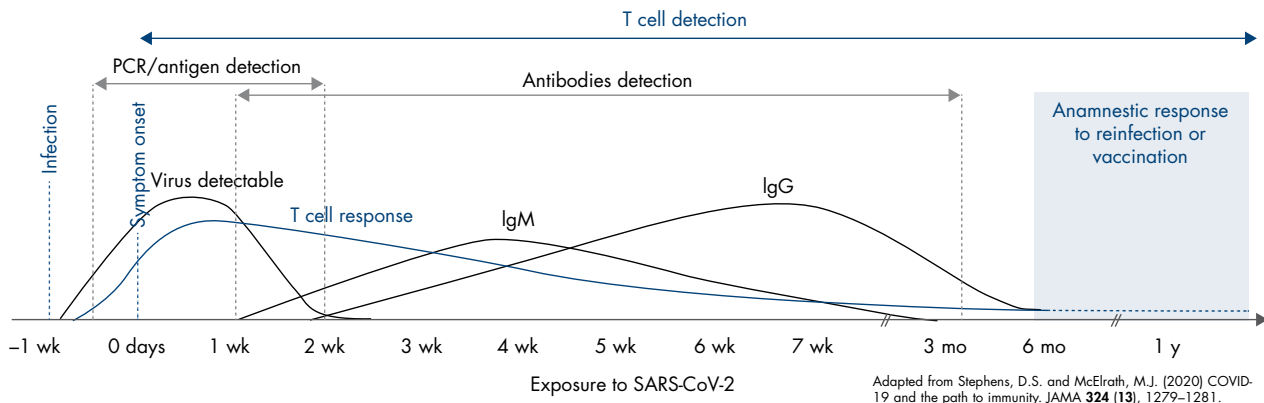


Figure 1. T cells are generated shortly after infection, vaccination, or after re-exposure. T cell immune response is detectable as early as the acute phase of infection and can be stimulated and detected even when levels of antibodies are low or undetectable (2, 7).

Researching immunity to advance our response to SARS-CoV-2

Numerous publications and recent research (1–7) highlight the potential applications of immune response assays in COVID-19 infections, such as, but not limited to:

- Researching cell-mediated immune (CMI) response following SARS-CoV-2 natural infection and/or COVID-19 vaccination
- Researching infection severity in hospitalized COVID-19 patients
- Researching COVID-19 outcomes in hospitalized/ICU patients

Key research highlights

Immune response investigations, covering specific and non-specific SARS-CoV-2 T cell response, for both innate and adaptive immune systems can provide valuable insights. Such research could help identify pathways to potential COVID-19 management improvements among severely ill hospitalized COVID-19 patients and individuals admitted to Intensive Care Units (ICUs) (5–7).

Additionally, investigating immunity in at-risk populations may possibly help with vaccine prioritization and vaccination efficiency assessment.

QuantiFERON® SARS-CoV-2 RUO enables comprehensive research of immune response in SARS-CoV-2 infected patients, allowing you to advance your research and improve our understanding of COVID-19.

Easily assess cell-mediated immune response to SARS-CoV-2 infection

QIAGEN is widely committed in the fight against COVID-19: QuantiFERON SARS-CoV-2 RUO solution is an original combination of blood collection tubes containing innovative specific peptides formulated to stimulate lymphocytes in heparinized whole blood involved in cell-mediated immunity. Plasma from the stimulated samples is used for detection of INF- γ using a simple ELISA.

The QuantiFERON SARS-CoV-2 RUO solution is composed of several components that can be ordered separately or combined to maximize T cell immune response research insights.



Table 1. QuantiFERON SARS-CoV-2 RUO components

	Starter Set	Extended Set	Monitor Direct
Description	The easy way to START SARS-CoV-2 immune response investigation	Additional peptides to EXTEND immune response research on SARS-CoV-2	EVALUATE immune response; now simply in a tube
Content	Original combination of specific peptides from the spike antigen (S1, S2, RBD subdomains) eliciting CD4 (Ag1) and CD4+CD8 (Ag2) T cells immune responses	Contains additional specific peptides, covering the S, N and M domains, and other domains from the full genome of SARS-CoV-2 to elicit a more complete specific T cell-mediated immune response	Unique association of Toll-like Receptor (TLR) agonists and T-cell receptor (TCR) agonists to stimulate different cell types involved in both the innate and adaptive immune system.
Research areas	<ul style="list-style-type: none"> • Research previous exposure and/or when there are low/undetectable levels of antibodies • Research immune response post vaccination 	<ul style="list-style-type: none"> • Maximize immune response research capabilities by stimulating multiple antigenic targets in natural infection • Research immune response after vaccination with non spike-based-only vaccines 	<ul style="list-style-type: none"> • Research IFN-γ kinetics in SARS-CoV-2 infection • Helps research on COVID-19 severity assessment • Helps research on COVID-19 outcomes in hospitalized patients

References

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2. Hellerstein, M. (2020) What are the roles of antibodies versus a durable, high quality T-cell response in protective immunity against SARS-CoV-2? *Vaccine: X* **6**:100076, 2590–1362. DOI: 10.1016/j.jvacx.2020.100076
3. Sauer, K. and Harris, T. (2020) An Effective COVID-19 vaccine needs to engage T cells. *Front Immunol* **11**, 2371.
4. Murugesan, K. et al., (2020) Interferon-gamma release assay for accurate detection of SARS-CoV-2 T cell response. *Clin Infect Dis*, ciaa1537, <https://doi.org/10.1093/cid/ciaa1537>
5. Petrone, L. et al., (2020) A whole blood test to measure SARS-CoV-2 specific response in COVID-19 patients. *Clin Microbiol Infect* <https://doi.org/10.1016/j.cmi.2020.09.051>.
6. Payen, D. et al., (2020) A longitudinal study of immune cells in severe COVID-19 patients. *Front Immunol* **11**:580250. doi: 10.3389/fimmu.2020.580250
7. Koblishcke, M. et al., (2020) Dynamics of CD4 T cell and antibody responses in COVID-19 patients with different disease severity. *Front Med* **7**:592629. doi: 10.3389/fmed.2020.592629

Ordering Information

Product*	Contents	Cat. no.
QuantiFERON SARS-CoV-2 Starter Pack	Starter Set (cat. no. 626115) plus Control Set (cat. no. 626015) Starter Set: Blood collection tubes coated with specific SARS-CoV-2 peptides pool from spike antigen (S1 S2 RDB); 100 Ag1 Tubes (2 x 50/rack); 100 Ag2 Tubes (2 x 50/rack) Control Set: Negative and positive control blood collection tubes; 100 Nil Tubes (2 x 50/rack); 100 Mitogen Tubes (2 x 50/rack)	626715
QuantiFERON SARS-CoV-2 Extended Pack	Extended Set (cat. no. 626215) plus Control Set (cat. no. 626015) Extended Set: Blood collection tubes coated with specific SARS-CoV-2 peptides pool from spike and additional peptides issued from the full genome of the SARS-CoV-2 virus; 100 Ag3 Tubes (2 x 50/rack) Control Set: Negative and positive control blood collection tubes; 100 Nil Tubes (2 x 50/rack); 100 Mitogen Tubes (2 x 50/rack)	626815
QuantiFERON SARS-CoV-2 Starter + Extended Pack	Starter Set (cat. no. 626115) plus Extended Set (cat. no. 626215) plus Control Set (cat. no. 626015) Starter Set: Blood collection tubes coated with specific SARS-CoV-2 peptides pool from spike antigen (S1 S2 RDB); 100 Ag1 Tubes (2 x 50/rack); 100 Ag2 Tubes (2 x 50/rack) Extended Set: Blood collection tubes coated with specific SARS-CoV-2 peptides pool from spike and additional peptides issued from the full genome of the SARS-CoV-2 virus; 100 Ag3 Tubes (2 x 50/rack) Control Set: Negative and positive control blood collection tubes; 100 Nil Tubes (2 x 50/rack); 100 Mitogen Tubes (2 x 50/rack)	626915
QuantiFERON Monitor Direct	Blood collection tubes using an original combination of Toll-like Receptor (TLR) agonist and T-cell receptors (TCR) agonist to stimulate different cell types involved in both the innate and adaptive immune system; 100 QFN Monitor Direct Tubes (2 x 50/rack)	626315
QuantiFERON ELISA	ELISA microplate for the dosage of IFN-γ; Microplate Strips; IFN-gamma Standard, lyophilized; Green Diluent; Conjugate 100x Concentrate, lyophilized; Wash Buffer 20x Concentrate; Enzyme Substrate Solution; Enzyme Stopping Solution (2 x ELISA plates)	626410

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