SALIVARY IgG/IgM QUICK START GUIDE

BIOLOGICAL CONSIDERATIONS

In saliva, IgG/IgM diffuses from plasma, most commonly through gingival crevices, but can also be produced locally. IgG/IgM levels in saliva are generally in the microgram per milliliter range, while in blood they are much higher, in the milligram per milliliter range. Therefore, when measuring pathogen-specific IgG/IgM, total IgG/IgM can be used to qualify a saliva sample that assures sufficient levels of total IgG/IgM to provide confidence in pathogen-specific IgG/IgM results. In this regard, total IgG/IgM may be essential to prove a negative pathogen-specific test result. In addition, this assay may be used to qualify samples for testing after sample storage. Immunoglobulin G, specifically, is critical for host immune-defense against infectious pathogens and is the most abundant antibody found in blood. Importantly, the reactivity of salivary IgG/IgM mirrors that of serum IgG/IgM, so oral fluid is an attractive alternative sample type for serological studies where antibody levels indicate an individual's immune status to a pathogen. Saliva serology as an alternative to serum enables advantages like home collection or sampling populations where blood draws are a challenge. This enables efficient surveying of antibodies in saliva, which allows for tracking pathogen or vaccine exposure with differentiation between recent (IgM) or historical (IgG) exposure. In addition, a recent publication has indicated that levels of total IgG in oral fluids correlate with proinflammatory cytokine levels and could be used as an inexpensive surrogate marker, to index oral inflammation.

Biological Representation	Systemic

SAMPLE TIMING AND DESIGN

Sample timing is important when considering the measurement of a pathogen-specific IgG or IgM, however, when measuring total IgG or IgM the main utility is to qualify the sample, so timing is concurrent with pathogen specific testing. When exposed to a primary antigen, your body's first response is the IgM, which in turn causes stimulation of an IgG response. Within about 10-14 days, IgM is the first response followed by IgG. An IgM response occurs 10-14 days after exposure, while an IgG has a delayed response of about 3 weeks. In some cases, like with SARS CoV2, IgG levels appear 10-14 days.

FREQUENTLY STUDIED WITH

Cytokines, C-Reactive Protein, SIgA, SARS-CoV-2

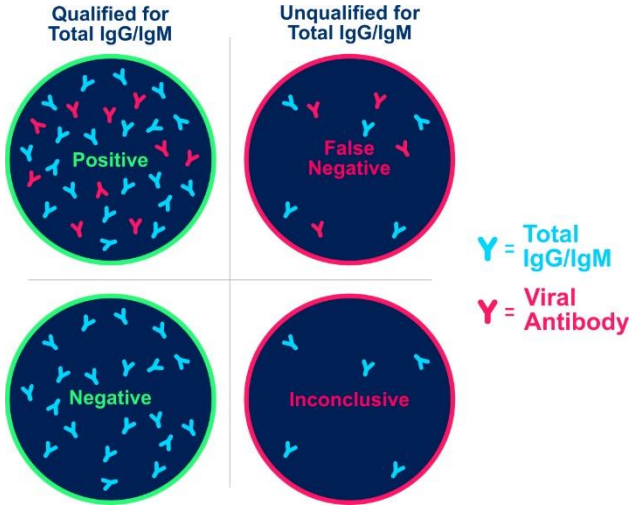
TECHNICAL SUMMARY

Sample Collection Methods & Volumes	
Passive Drool	✓
SalivaBio Swabs	✓
Optimum Collection Volume	50 µL*

*Add 300 µL to the total collection volume for all analytes of interest.

EXAMPLE DATA

This assay is helpful to qualify the quantity of total IgG/IgM in the sample as a means of sample quality assurance for instance when performing serological studies.



Representative Illustration

KEY RESOURCES

1. Granger, DA, Taylor, MK. (2020). Salivary Bioscience: Foundations of Interdisciplinary Saliva Research and Applications. Springer. https://springer.com/book/10.1007/978-3-030-35784-9
2. Heaney, J., et al., (2018). The utility of saliva for the assessment of anti-pneumococcal antibodies: investigation of saliva as a marker of antibody status in serum. Biomarkers : biochemical indicators of exposure, response, and susceptibility to chemicals, 23(2), 115–122.
3. Riis, J. L., et al., (2020). Salivary total Immunoglobulin G as a surrogate marker of oral immune activity in salivary bioscience research. Brain, behavior, & immunity - health, 1, 100014.
4. Hettegger, P., et al., (2019). High similarity of IgG antibody profiles in blood and saliva opens opportunities for saliva based serology. PloS one, 14(6), e0218456.
5. Brandtzaeg P. (2007). Do salivary antibodies reliably reflect both mucosal and systemic immunity?. *Annals of the New York Academy of Sciences*, *1098*, 288–311.
6. Madar, R., et al., (2002). Detection of antibodies in saliva--an effective auxiliary method in surveillance of infectious diseases. Bratislavske lekarske listy, 103(1), 38–41.