SALIVARY SECRETORY IgA QUICK START GUIDE



BIOLOGICAL CONSIDERATIONS

Secretory Immunoglobulin A (SIgA) is a subclass of Immunoglobulin A (IgA), an antibody that plays a critical role in mucosal immunity. SIgA is the main immunoglobulin found in mucous secretions from tear glands, salivary glands, mammary glands, the respiratory system, the genito-urinary tract, and the gastrointestinal tract and is part of a complex immune defense network along with other immunoglobulins such as IgG and IgM (which can also be measured in saliva). SIgA is not derived from blood. It is produced by B-lymphocytes adjacent to the mucosal cells, then transported through the cell interiors, and released into the secretions from the cells. Differences in SIgA levels have been observed in different saliva glands from humans, with the highest levels found in the minor saliva glands. SIgA exhibits a diurnal rhythm, decreasing from the highest levels in the evening. SIgA levels in saliva also vary in response to physical and psychological stress through interactions with the autonomic nervous system.

Biological Representation Mucosal Immunity

SAMPLE TIMING AND DESIGN

SIgA levels in saliva are affected by flow rates, with concentrations normally decreasing as flow rates increase. Measurement of flow rates is advisable in order to express SIgA secretion as a function of time.

FREQUENTLY STUDIED WITH

Cortisol, IgG, IgM, Cytokines

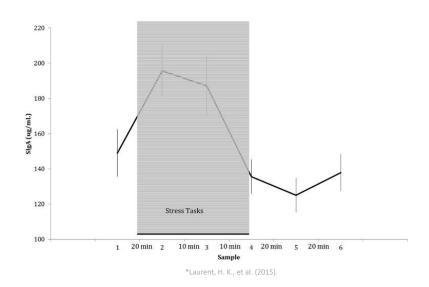
TECHNICAL SUMMARY

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

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

EXAMPLE DATA

Observed SIgA levels across samples (gray area represents stress tasks).



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. Kornienko, O., et al. (2018). Associations Between Secretory Immunoglobulin A and Social Network Structure. International journal of behavioral medicine, 25(6), 669–681.
- 3. Holmgren, J., Czerkinsky, C. (2005). Mucosal immunity and vaccines. Nature Medicine, 11(4 Suppl), s45-53.
- 4. Brandtzaeg, P. (2007). Do salivary antibodies reliably reflect both mucosal and systemic immunity? Ann N Y Acad Sci, 1098, 288-311.
- 5. *Laurent, H. K., et al. (2015). Secretory IgA reactivity to social threat in youth: Relations with HPA, ANS, and behavior. Psychoneuroendocrinology, 59, 81–90.
- 6. Li, T.-L., Gleeson, M. (2004). The effect of single and repeated bouts of prolonged cycling and circadian variation on saliva flow rate, immunoglobulin A and alpha-amylase responses. J Sports Sci, 22(11-
- 12), 1015-1024.
 Tsujita, S., Morimoto, K. (1999). Secretory IgA in saliva can be a useful stress marker. Env Health Prev Med, 4, 1-8.
- Bishop, N.C., Gleeson, M. (2009). Acute and chronic effects of exercise on markers of mucosal immunity. Front Biosci, 1(14), 4444-56.

