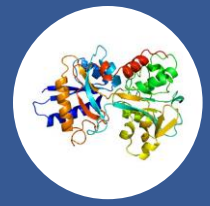


SALIVARY TNF-ALPHA QUICK START GUIDE



BIOLOGICAL CONSIDERATIONS

Tumor necrosis factor-alpha (TNF-Alpha) is a prominent pluripotent cytokine that plays a key role in innate inflammatory responses. When dysregulated, it causes chronic inflammatory diseases such as rheumatoid arthritis, inflammatory bowel disease, but also oral conditions such as gingivitis and periodontal disease. In the context of infectious disease, TNF- α triggers a cascade of chemokines and cytokines that attract and activate lymphoid cells at the infection site. TNF- α also participates in the development of acquired immunity from infection, remodeling of tissues and contributes to apoptosis of tumor cells. TNF- α is also involved in various auto-immune conditions, heart disease, and osteoarthritis. There is little evidence of correspondence between TNF- α levels in blood and saliva in healthy individuals, but there may be an association during specific physiological states of systemic inflammation (i.e., sepsis, burns).

Biological Representation	Local/Oral Inflammation
Serum-Saliva Correlation	State Specific

SAMPLE TIMING AND DESIGN

In healthy individuals with no signs of oral inflammation, TNF- α levels in saliva are observed in the low pg/ml range to undetectable. Salivary TNF- α levels are likely to be elevated in the context of several disease states such as periodontal disease, sepsis, gingivitis, and oral cancer. The biological availability of TNF- α is regulated by the secretion of soluble receptors which are measurable in oral fluids.

FREQUENTLY STUDIED WITH

IL-1 Beta, IL-6, IL-8, sTNF-R Type I and Type II

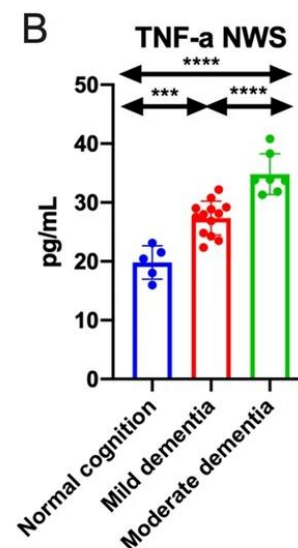
TECHNICAL SUMMARY

Sample Collection Methods & Volumes	
Passive Drool	✓
SalivaBio Swabs	-
Additional Collection Volume	150 μ L*

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

EXAMPLE DATA

Diagnostic significance of salivary TNF- α in ischemic stroke patients: correlation between salivary TNF- α and cognitive function in ACE III scale (A), results of ROC analysis for salivary TNF- α in relation to cognitive function status in ACE III scale. Differences statistically significant at: ** $p < 0.005$, **** $p < 0.0001$.



*Maciejczyk, M, et al. (2021).

KEY RESOURCES

- 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>
- Giannobile, W.V., Beikler, T., Kinney, J.S., et al. (2009). Saliva as a diagnostic tool for periodontal disease: Current state and future directions. Periodontology 2000, 50, 52-64.
- Riis, J, et al. (2021). Best practice recommendations for the measurement and interpretation of salivary proinflammatory cytokines in biobehavioral research. Brain Behav Immun. 2021 91:105-116.
- *Maciejczyk, M, et al. (2021). Salivary cytokine profile in patients with ischemic stroke. Sci Rep. 11(1):17185.
- Chiamulera, M, et al. (2021). Salivary cytokines as biomarkers of oral cancer: a systematic review and meta-analysis. BMC cancer, 21(1), 205.
- Diesch, T, et al. (2021). Cytokines in saliva as biomarkers of oral and systemic oncological or infectious diseases: A systematic review. Cytokine, 143, 155506.

