Biomarker Datasheet

Human Granzyme B U-VUE® Biomarker

Granzyme B (GrzB) is a serine protease stored in secretory granules of Cytotoxic T lymphocytes (CTLs) and Natural killer (NK) cells. Activated cytotoxic cells release granzyme B which enters the target cells where it can interact with cellular substrates to initiate cell death.

Overview

Target	Other names	Isotype	Primary cell type	Subcellular location	Positive control(s)
Granzyme B	GZMB, CCPI, CGL-1, CGL1, CSP-B, CSPB, CTLA1, CTSGL1, HLP, SECT	Rabbit IgG	Cytotoxic T lymphocytes and Natural killer cells	Intracellular, secreted	Tonsil/ Spleen

*Clone available upon request

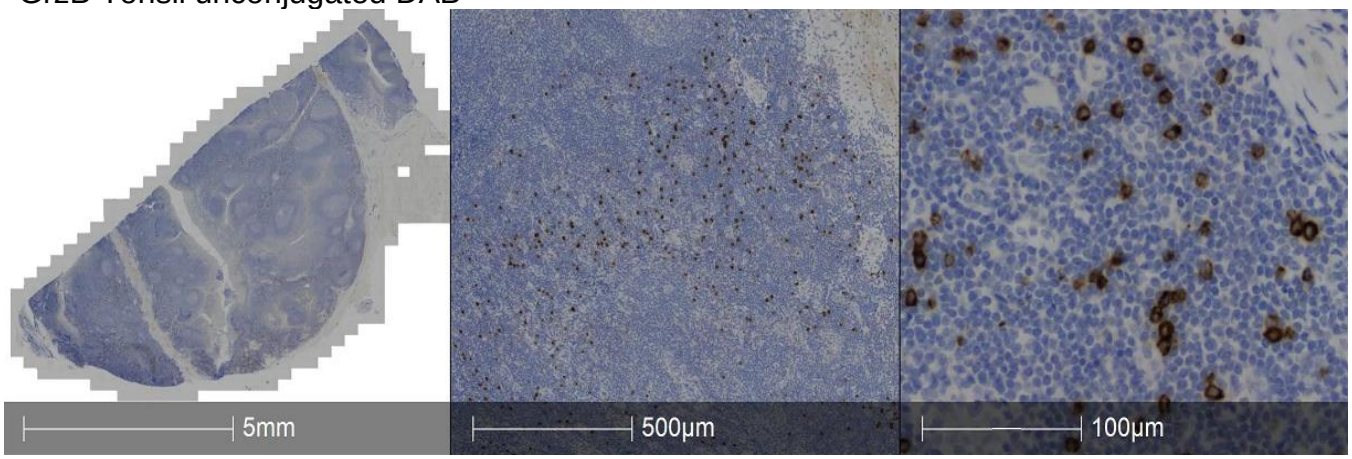
Quality Control

Each lot of antibody conjugate reagent is tested on positive control tissue and reviewed by reviewed by Ultivue's pathologists and scientists to ensure appropriate staining pattern and signal intensity by both qualitative and quantitative review.

Predicate Comparison

Serial sections of tonsil and tumor tissue controls were stained with traditional chromogenic DAB using unconjugated antibodies and with the InSituPlex® (ISP) monoplex assay to demonstrate concordance between staining modalities.

GrzB Tonsil unconjugated DAB



GrzB Tonsil ISP

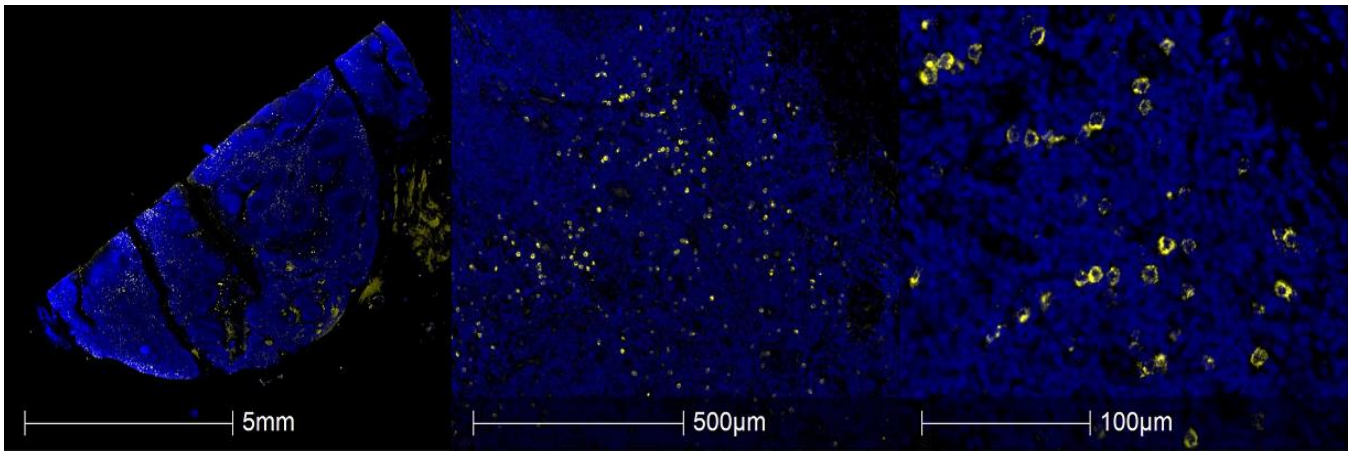


Figure 1: Comparison of unconjugated DAB and InSituPlex® monoplex assay in tonsil tissue. Chromogenic DAB (top panel), fluorescent ISP staining (bottom panel).

Assay Reproducibility

An InSituPlex® monoplex assay was performed across serial sections of tonsil and colorectal cancer (CRC) tissue on the Leica BOND RX autostainer. Staining was found to be qualitatively and quantitatively equivalent across all slides in the run as demonstrated by coefficient of variance (CV) of positive cell density and signal intensity.

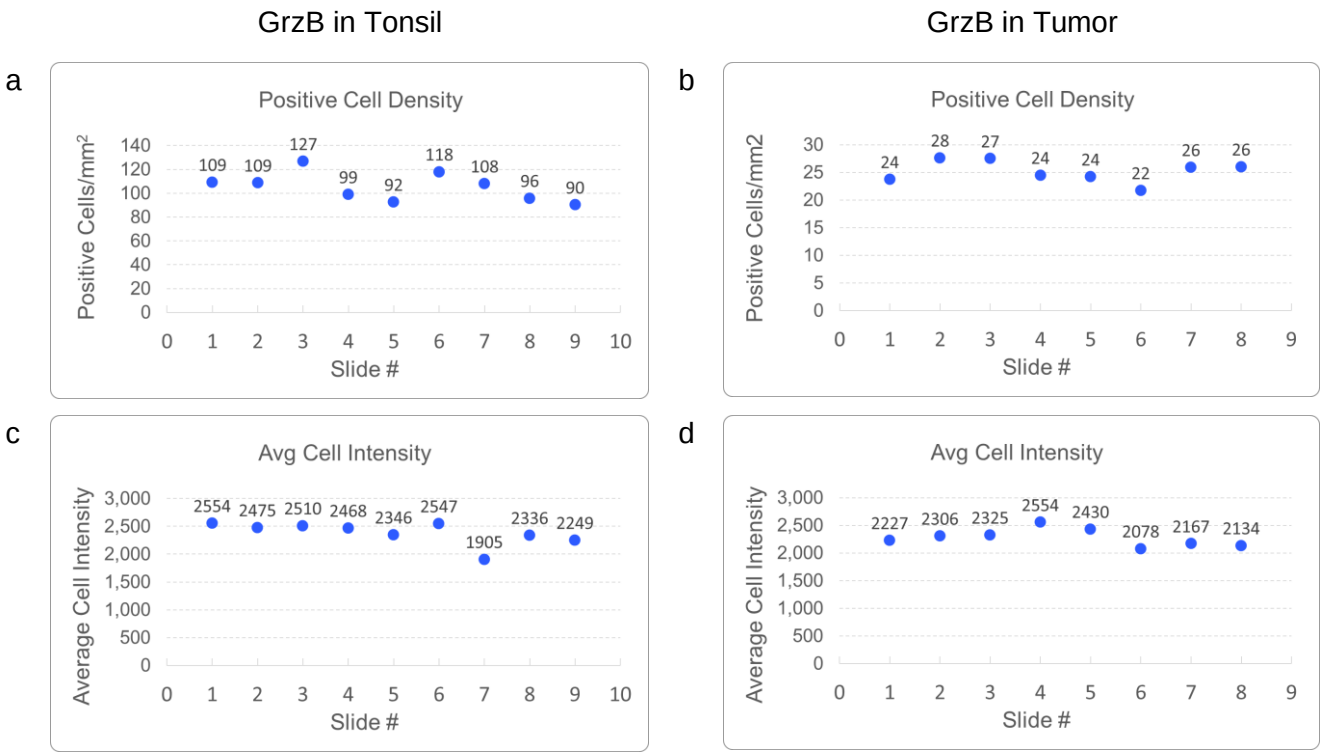


Figure 2: a. Number of positive cells/mm^2 per slide on tonsil tissue. Inter-slide coefficient of variance (CV) =10.9% **b.** Number of positive cells/mm^2 per slide on CRC tissue. Inter-slide CV = 7.4% **c.** Mean positive signal intensity per slide on tonsil tissue. Inter-slide CV = 8.2%. **d.** Mean positive signal intensity per slide on CRC tissue. Inter-slide CV = 6.6%.

References

1. Hurkmans, D. P., Basak, E. A., Schepers, N., Oomen-De Hoop, E., Van der Leest, C. H., El Bouazzaoui, S., Bins, S., Koolen, S., Sleijfer, S., Van der Veldt, A., Debets, R., Van Schaik, R., Aerts, J., & Mathijssen, R. (2020). Granzyme B is correlated with clinical outcome after PD-1 blockade in patients with stage IV non-small-cell lung cancer. *Journal for immunotherapy of cancer*, *8*(1), e000586. https://doi.org/10.1136/jitc-2020-000586
2. Sun, B., Liu, M., Cui, M., & Li, T. (2020). Granzyme B-expressing treg cells are enriched in colorectal cancer and present the potential to eliminate autologous T conventional cells. *Immunology letters*, *217*, 7–14. https://doi.org/10.1016/j.imlet.2019.10.007
3. Wang, W., Zou, R., Qiu, Y., Liu, J., Xin, Y., He, T., & Qiu, Z. (2021). Interaction Networks Converging on Immunosuppressive Roles of Granzyme B: Special Niches Within the Tumor Microenvironment. *Frontiers in immunology*, *12*, 670324. https://doi.org/10.3389/fimmu.2021.670324