

Biomarker Datasheet

Human CD8 U-VUE[®] Biomarker

CD8 is primarily expressed on cytotoxic T cells, but it can also be expressed on cortical thymocytes, dendritic cells and NK cells. CD8 is a transmembrane glycoprotein that is a co-receptor for the T cell receptor (TCR). CD8 binds MHC Class I to aid in antigen recognition and TCR-mediated activation. CD8 forms dimers of CD8 α and CD8 β and clone C8/144B recognizes the alpha form of CD8.

Overview

Target	Other names	Isotype	Primary cell type	Subcellular location	Positive control(s)
CD8	T-lymphocyte differentiation antigen T8, CD8A	Mouse IgG1	Cytotoxic lymphoid cells	Plasma membrane	Tonsil/ Spleen

*Clone available upon request

Quality Control

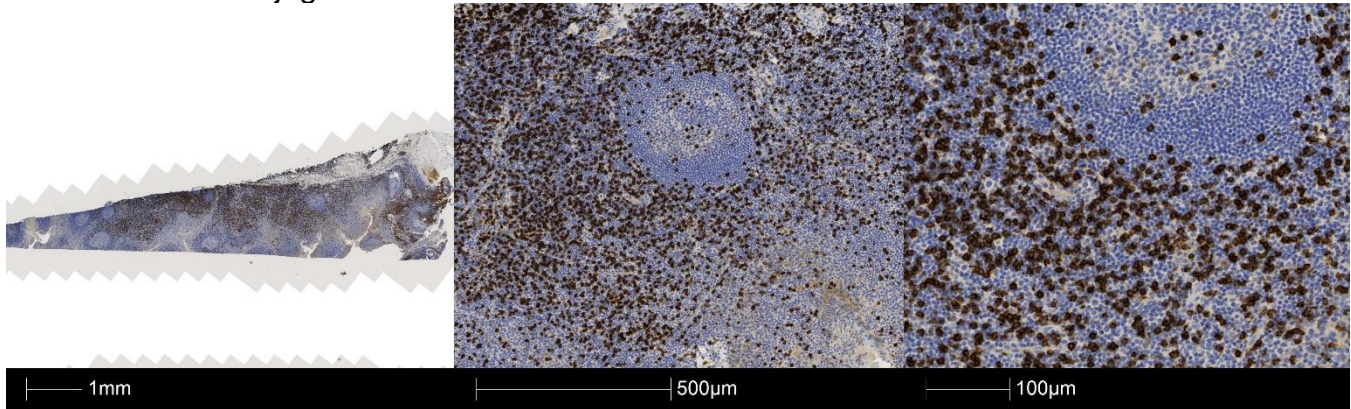
Each lot of antibody conjugate reagent is tested on positive control tissue and reviewed by reviewed by Ultivue's pathologists and scientists to ensure appropriate staining pattern and signal intensity by both qualitative and quantitative review.



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.

CD8 Tonsil unconjugated DAB



CD8 Tonsil ISP

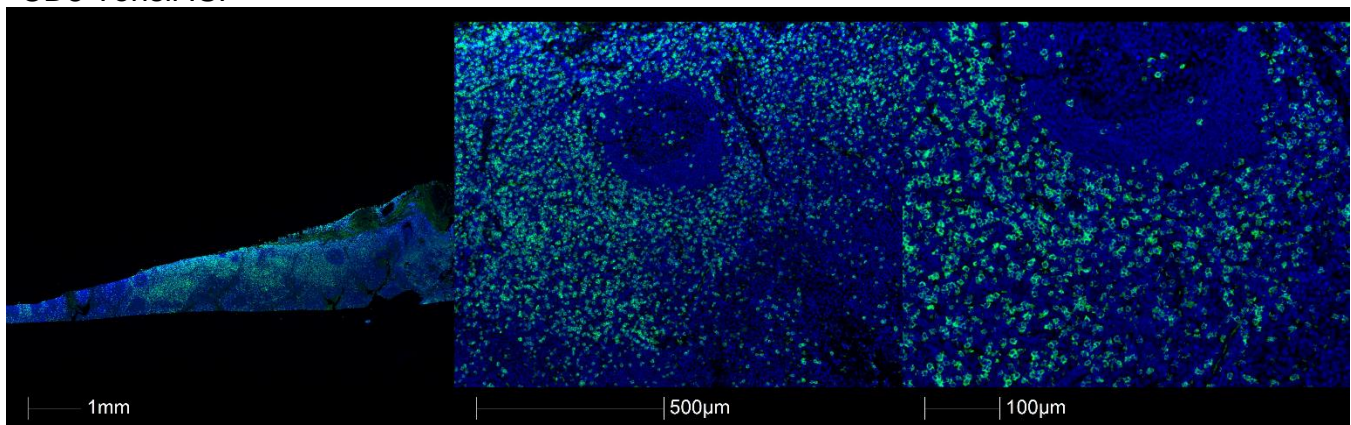


Figure 1: Comparison of unconjugated DAB and InSituPlex® monoplex assay in tonsil tissue. Chromogenic DAB (top panel), fluorescent ISP staining (bottom panel).

Assay Reproducibility

An InSituPlex® monoplex assay was performed across serial sections of tonsil and non-small cell lung carcinoma (NSCLC) 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.

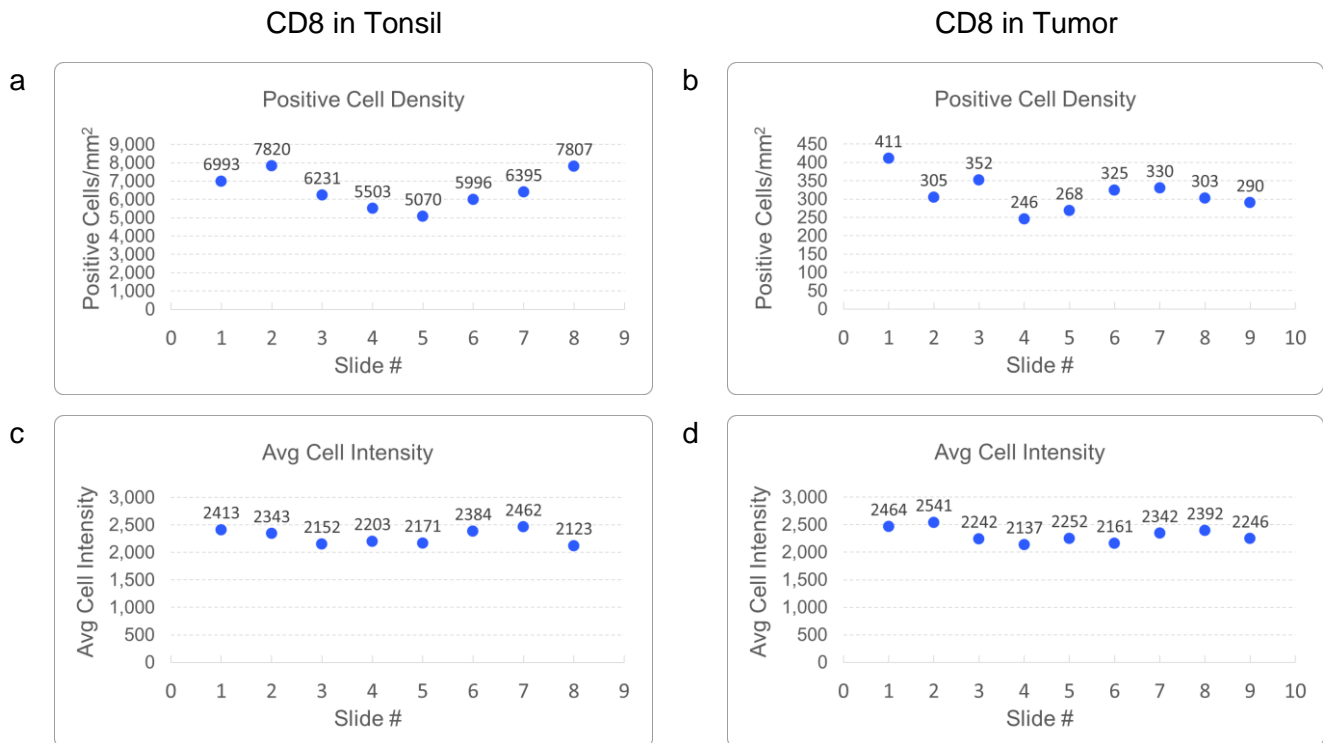


Figure 2: **a.** Number of positive cells/mm² per slide on tonsil tissue. Inter-slide coefficient of variance (CV) = 14.5%. **b.** Number of positive cells/mm² per slide on NSCLC tissue. Inter-slide CV = 16.1%. **c.** Mean positive signal intensity per slide on tonsil tissue. Inter-slide CV = 5.5%. **d.** Mean positive signal intensity per slide on NSCLC tissue. Inter-slide CV = 3.6%.

References

1. Collier, J. L., Weiss, S. A., Pauken, K. E., Sen, D. R., & Sharpe, A. H. (2021). Not-so-opposite ends of the spectrum: CD8+ T cell dysfunction across chronic infection, cancer and autoimmunity. *Nature immunology*, 22(7), 809–819. <https://doi.org/10.1038/s41590-021-00949-7>
2. Farhood, B., Najafi, M., & Mortezaee, K. (2019). CD8+ cytotoxic T lymphocytes in cancer immunotherapy: A review. *Journal of cellular physiology*, 234(6), 8509–8521. <https://doi.org/10.1002/jcp.27782>
3. Sanmamed, M. F., Nie, X., Desai, S. S., Villaroel-Espindola, F., Badri, T., Zhao, D., Kim, A. W., Ji, L., Zhang, T., Quinlan, E., Cheng, X., Han, X., Vesely, M. D., Nassar, A. F., Sun, J., Zhang, Y., Kim, T. K., Wang, J., Melero, I., Herbst, R. S., ... Chen, L. (2021). A Burned-Out CD8+ T-cell Subset Expands in the Tumor Microenvironment and Curbs Cancer Immunotherapy. *Cancer discovery*, 11(7), 1700–1715. <https://doi.org/10.1158/2159-8290.CD-20-0962>