Biomarker Datasheet

Human CD163 U-VUE® Biomarker

CD163 is a type I transmembrane protein belonging to the group B of the scavenger receptor cysteine-rich superfamily. It is involved in the clearance and endocytosis of haptoglobin-hemoglobin complexes and has been widely used to identify M2 type macrophage. The scavenging role of CD163 is critical to its anti-inflammatory response, and recent findings have shown the significance of CD163-positive macrophages in tumor progression.

Overview

Target	Other names	Isotype	Primary cell type	Subcellular location	Positive Control(s)
CD163	M130, MM130, SCARI1	Rabbit IgG	Monocytes, macrophages, myeloid cells, bone marrow stromal cells, subset of erythroid progenitors	Plasma Membrane	Tonsil/ Spleen

*Clone available upon request

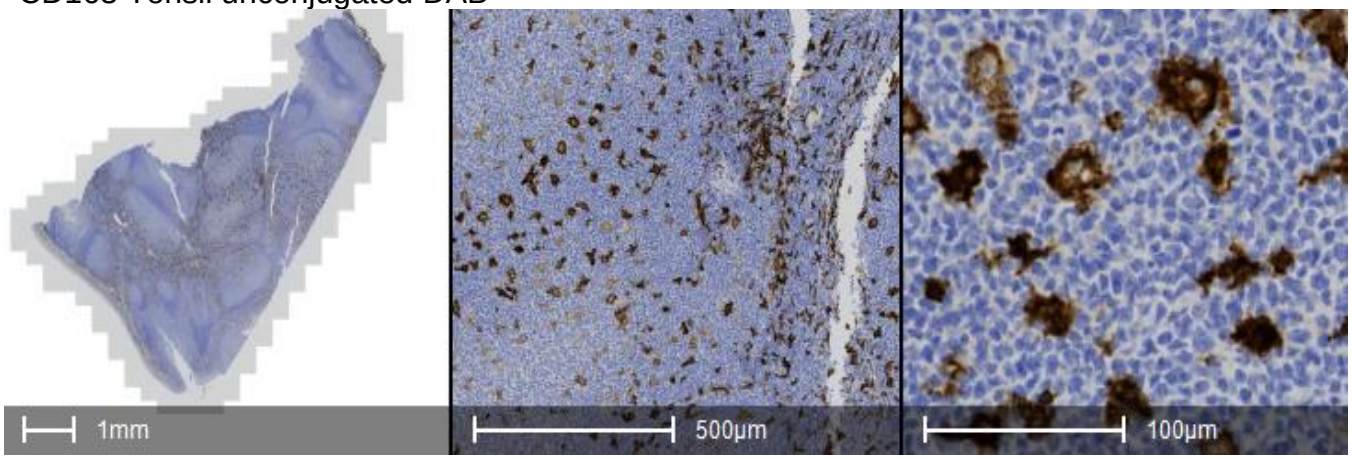
Quality Control

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.

CD163 Tonsil unconjugated DAB



CD163 Tonsil ISP

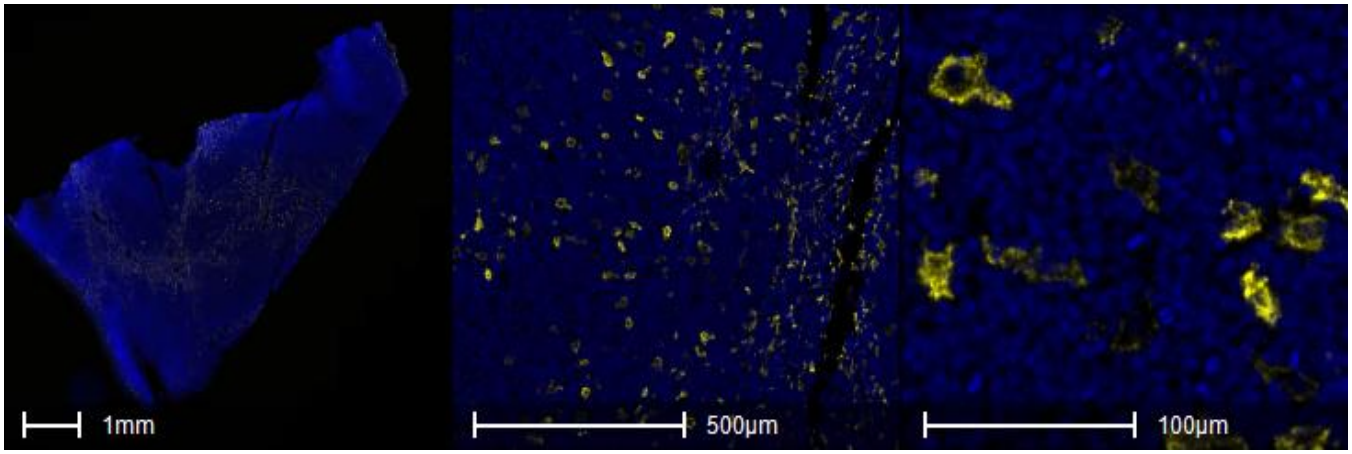


Figure 1: Comparison of unconjugated DAB and InSituPlex® monoplex assay in tonsil tissue. Chromogenic DAB (top panel), fluorescent ISP staining (bottom panel).

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.

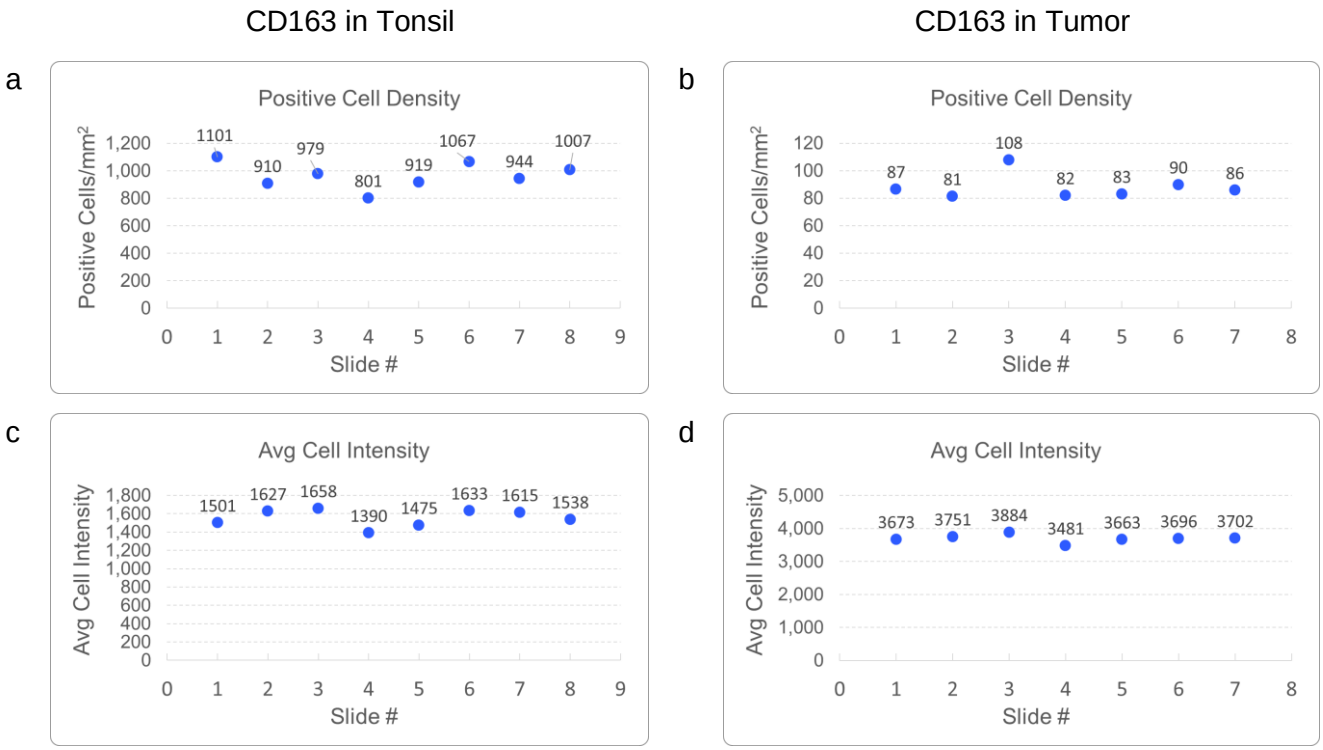


Figure 2: a. Number of positive cells/mm^2 per slide on tonsil tissue. Inter-slide coefficient of variance (CV) =9.2% **b.** Number of positive cells/mm^2 per slide on NSCLC tissue. Inter-slide CV = 9.7% **c.** Mean positive signal intensity per slide on tonsil tissue. Inter-slide CV = 5.7%. **d.** Mean positive signal intensity per slide on NSCLC tissue. Inter-slide CV = 3%.

References

1. Imam, R., Chang, Q., Black, M., Yu, C., & Cao, W. (2021). CD47 expression and CD163$^+$ macrophages correlated with prognosis of pancreatic neuroendocrine tumor. *BMC cancer*, *21*(1), 320. https://doi.org/10.1186/s12885-021-08045-7
2. Krijgsman, D., De Vries, N. L., Andersen, M. N., Skovbo, A., Tollenaar, R., Møller, H. J., Hokland, M., & Kuppen, P. (2020). CD163 as a Biomarker in Colorectal Cancer: The Expression on Circulating Monocytes and Tumor-Associated Macrophages, and the Soluble Form in the Blood. *International journal of molecular sciences*, *21*(16), 5925. https://doi.org/10.3390/ijms21165925
3. Ramos, R. N., Rodriguez, C., Hubert, M., Ardin, M., Treilleux, I., Ries, C. H., Lavergne, E., Chabaud, S., Colombe, A., Trédan, O., Guedes, H. G., Laginha, F., Richer, W., Piaggio, E., Barbuto, J., Caux, C., Ménétrier-Caux, C., & Bendriss-Vermare, N. (2020). CD163$^+$ tumor-associated macrophage accumulation in breast cancer patients reflects both local differentiation signals and systemic skewing of monocytes. *Clinical & translational immunology*, *9*(2), e1108. https://doi.org/10.1002/cti2.1108