Ultivue

Biomarker Datasheet

Human CD206 OmniVUE™ Biomarker

CD206 also known as mannose receptor C type 1 (MRC1), is a cell-surface protein abundantly presents on selected populations of macrophages and dendritic cells. Within macrophages, CD206 is normally expressed on the M2 but not M1 subtype and therefore serves as a useful marker to identify the M2 phenotype. An increased presence of CD206 expressing tumor associated macrophages in solid cancers has been proposed to be associated with worse outcomes in multiple types of malignancies.

Overview

| Target	Other names	Isotype	Primary cell type	Subcellular location	Positive control(s)
CD206	Integrin alpha-M	Rabbit IgG		Plasma membrane	Tonsil, Lymph Node, Lung, Placenta

*Clone available upon request

Quality Control

Each lot of Antibody-barcode conjugate reagent is tested on the appropriate positive control tissue and reviewed by Ultivue's pathologists and image analysis experts to ensure expected staining pattern and positive signal intensity, through qualitative as well as quantitative analysis. Lot-to-lot consistency is evaluated and strictly maintained through quantitative comparison of a new lot of reagent with the predicate (previous lot) with an accepted variability of ±20% for positive signal intensity, which is at par with the current standards practiced in pathology.
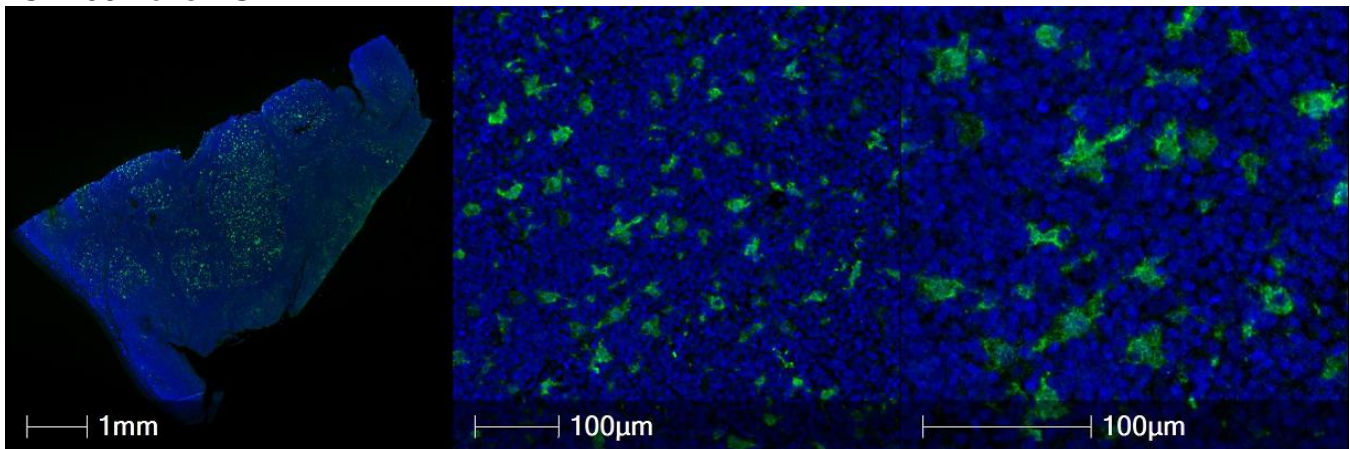
Predicate Comparison

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.

CD206 Tonsil unconjugated DAB
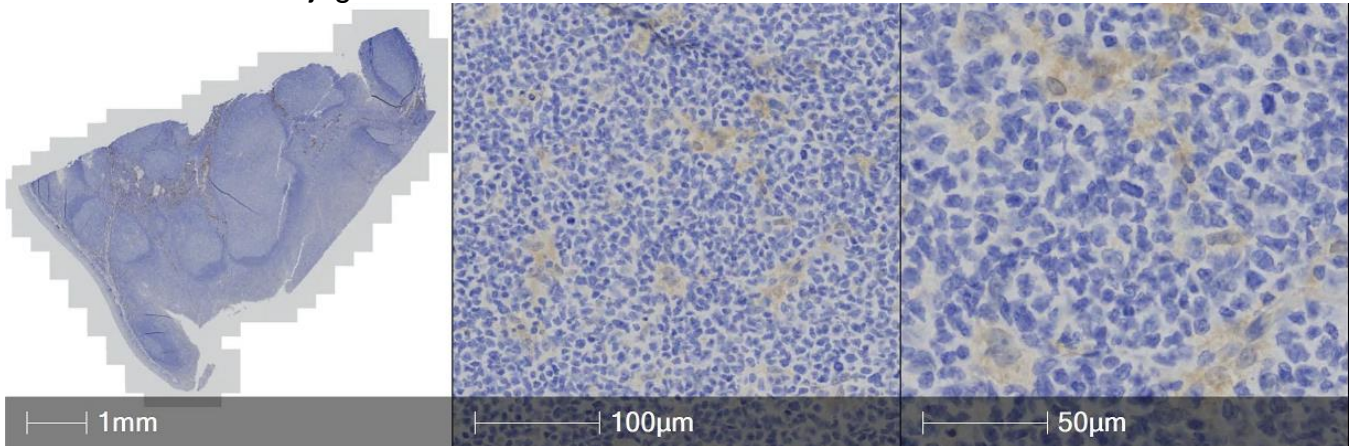
CD206 Tonsil ISP

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

Assay Precision Testing

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.
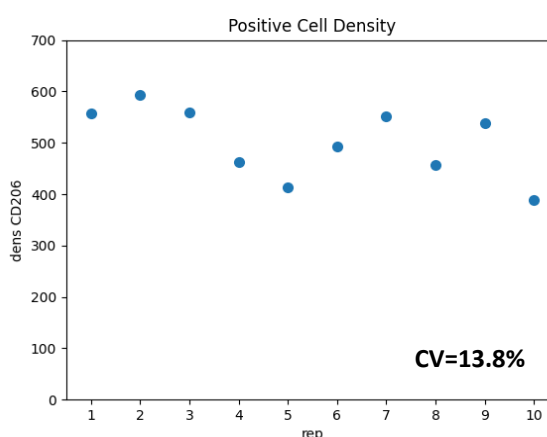
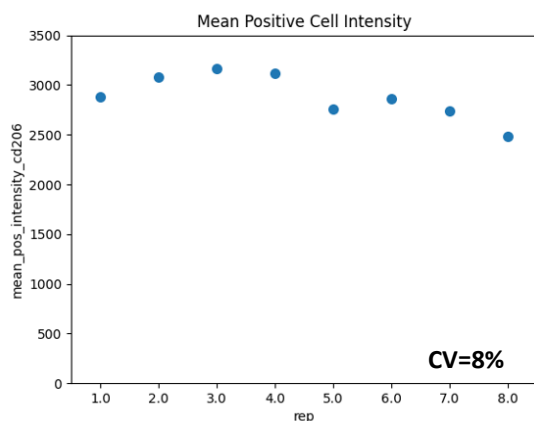CD206 stained on Tonsil   CD206 stained on Tumor
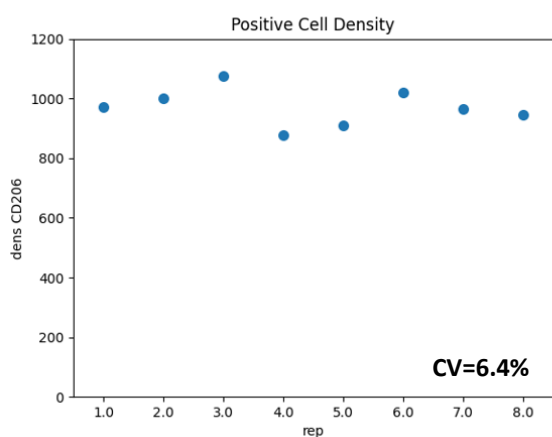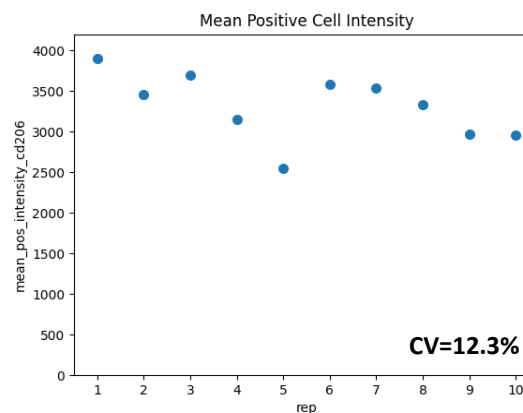

Figure 2: **a.** Number of positive cells/mm^2 per slide on tonsil tissue. Inter-slide coefficient of variance (CV) =6.4% **b.** Number of positive cells/mm^2 per slide on CRC tissue. Inter-slide CV = 13.8% **c.** Mean positive signal intensity per slide on tonsil tissue. Inter-slide CV = 8%. **d.** Mean positive signal intensity per slide on CRC tissue. Inter-slide CV = 12.3%.

References

1. Fan M, Chen S, Weng Y, et al. Ciprofloxacin promotes polarization of CD86+CD206- macrophages to suppress liver cancer. Oncol Rep. 2020;44(1):91-102. doi:10.3892/or.2020.7602
2. Du Y, Jiang X, Wang B, et al. The cancer-associated fibroblasts related gene CALD1 is a prognostic biomarker and correlated with immune infiltration in bladder cancer. Cancer Cell Int.2021;21(1):283. Published 2021 May 29. doi:10.1186/s12935-021-01896-x
3. Du Y, Wang B, Jiang X, et al. Identification and Validation of a Stromal EMT Related LncRNA Signature as a Potential Marker to Predict Bladder Cancer Outcome. Front Oncol. 2021;11:620674.Published 2021 Mar 4. doi:10.3389/fonc.2021.620674