

## Biomarker Datasheet

# Human CD11b U-VUE<sup>®</sup> Biomarker

CD11b is an integrin alpha M chain protein and is expressed by myeloid derived cells. It plays a key role in adherence of leukocytes to stimulate endothelium and mediates uptake of the complement-coated particles. Recent studies identify CD11b as a negative regulator of immune suppression and a target for cancer immune therapy.

### Overview

Target	Other names	Isotype	Primary cell type	Subcellular location	Positive control(s)
<b>CD11b</b>	ITGAM, CR3A, MAC-1	Rabbit IgG	Myeloid-derived cells (i.e., mature monocytes/ macrophages)	Plasma membrane, intracellular, selective cytoplasmic expression in subset of immune cells	Tonsil/ Spleen

\*Clone available upon request

### Quality Control

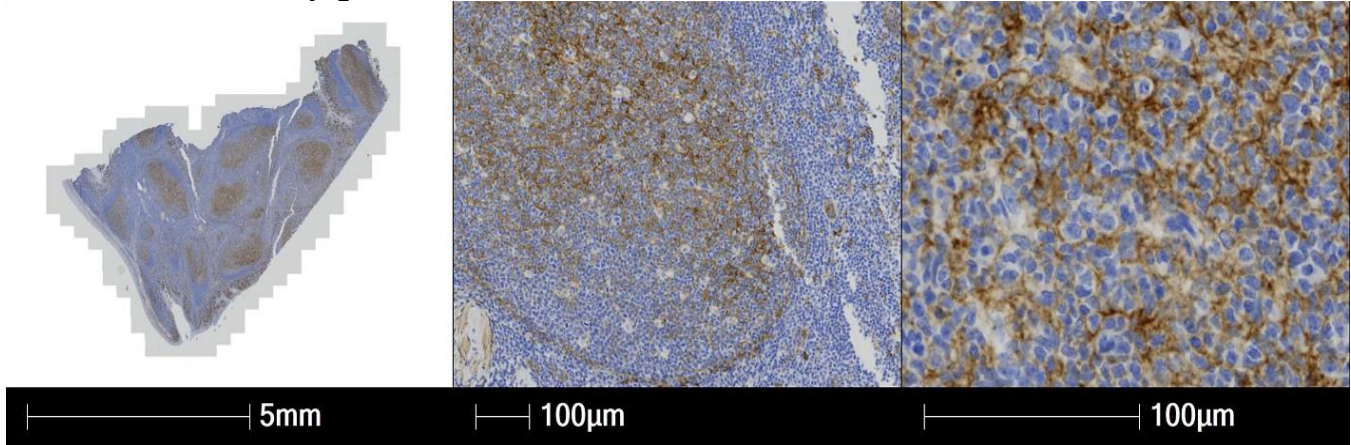
Each lot of antibody conjugate reagent is tested on positive control tissue and reviewed by reviewed by Ultivue's pathologists and scientists to ensure appropriate staining pattern and signal intensity by both qualitative and quantitative review.



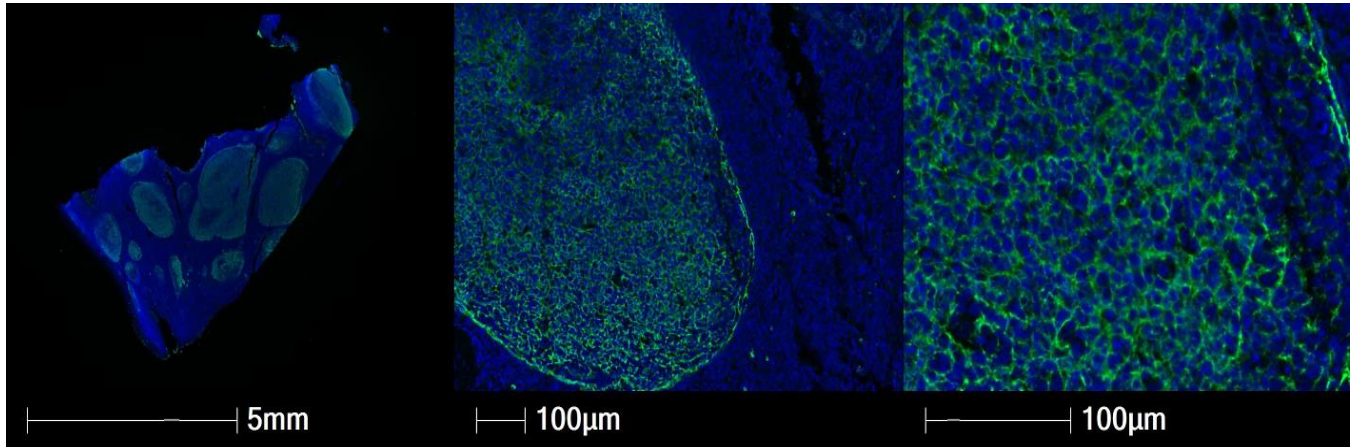
## Predicate Comparison

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.

### CD11b Tonsil unconjugated DAB



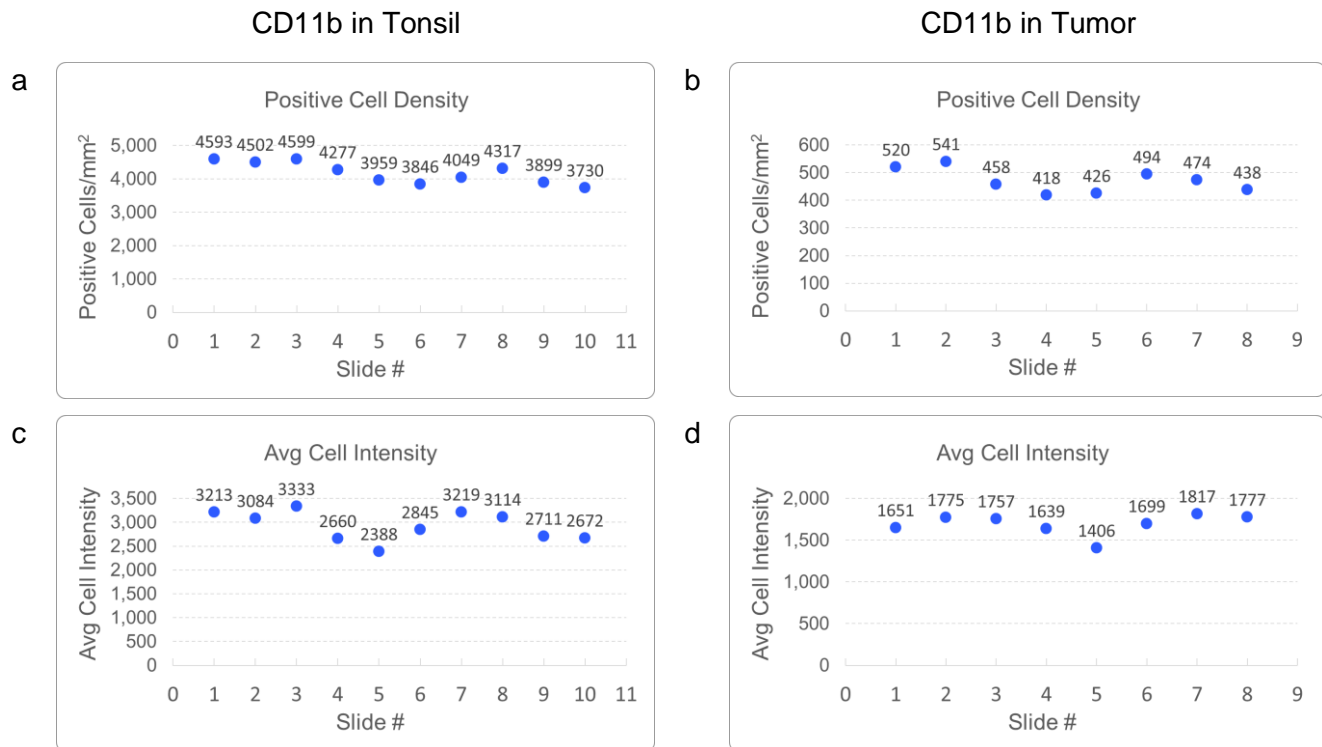
### CD11b Tonsil ISP



**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<sup>2</sup> per slide on tonsil tissue. Inter-slide coefficient of variance (CV) =7.3% **b.** Number of positive cells/mm<sup>2</sup> per slide on NSCLC tissue. Inter-slide CV = 8.9% **c.** Mean positive signal intensity per slide on tonsil tissue. Inter-slide CV = 10.1%. **d.** Mean positive signal intensity per slide on NSCLC tissue. Inter-slide CV = 7.3%.

## References

1. Bednarczyk, M., Stege, H., Grabbe, S., & Bros, M. (2020).  $\beta$ 2 Integrins-Multi-Functional Leukocyte Receptors in Health and Disease. *International journal of molecular sciences*, 21(4), 1402. <https://doi.org/10.3390/ijms21041402>
2. Geraghty, T., Rajagopalan, A., Aslam, R., Pohlman, A., Venkatesh, I., Zloza, A., Cimbaluk, D., DeNardo, D. G., & Gupta, V. (2020). Positive Allosteric Modulation of CD11b as a Novel Therapeutic Strategy Against Lung Cancer. *Frontiers in oncology*, 10, 748. <https://doi.org/10.3389/fonc.2020.00748>
3. Udumula, M. P., Sakr, S., Dar, S., Alvero, A. B., Ali-Fehmi, R., Abdulfatah, E., Li, J., Jiang, J., Tang, A., Buekers, T., Morris, R., Munkarah, A., Giri, S., & Rattan, R. (2021). Ovarian cancer modulates the immunosuppressive function of CD11b<sup>+</sup>Gr1<sup>+</sup> myeloid cells via glutamine metabolism. *Molecular metabolism*, 53, 101272. <https://doi.org/10.1016/j.molmet.2021.101272>