Biomarker Datasheet

Human CD14 U-VUE® Biomarker

CD14 is a pattern recognition receptor that detects the pathogen-associate molecular patterns found on the surface of microorganisms. It is a co-receptor located on the cell surface that mediates the innate immune response.

Overview

Target	Other names	Isotype	Primary cell type	Subcellular location	Positive control(s)
CD14	Monocyte differentiation antigen CD14	Rabbit IgG	Myeloid-derived cells (i.e., mature monocytes/ macrophages	Plasma membrane	Tonsil/ Spleen

*Clone available upon request

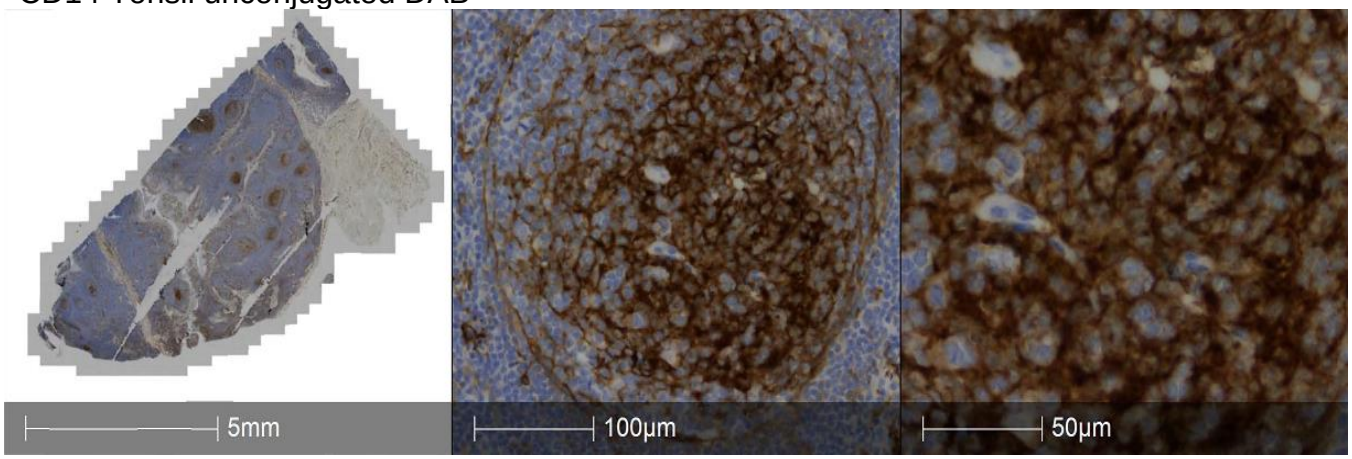
Quality Control

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.

CD14 Tonsil unconjugated DAB



CD14 Tonsil ISP

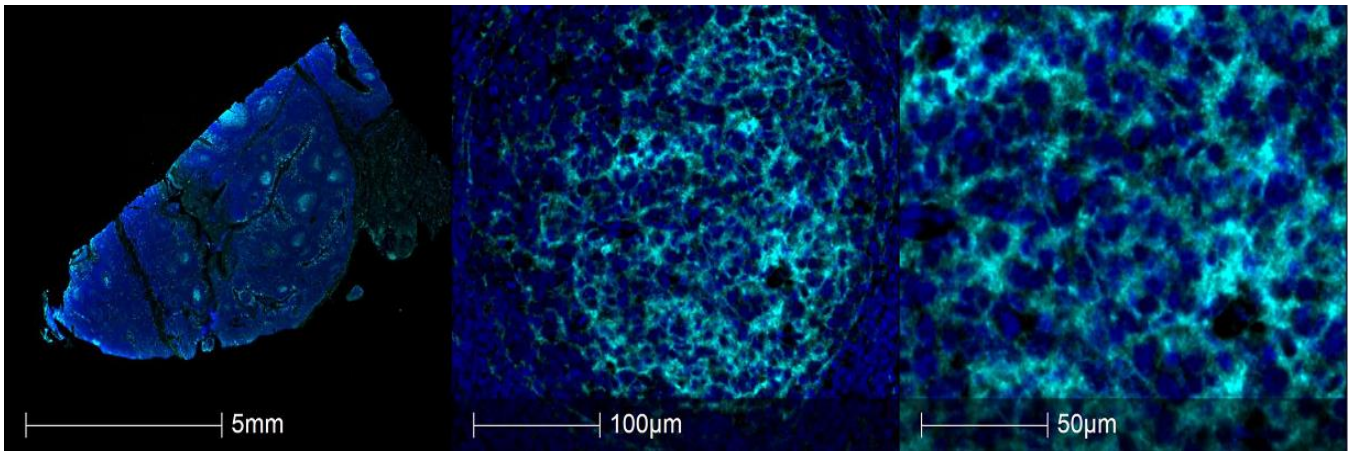


Figure 1: Comparison of unconjugated DAB and InSituPlex® monoplex assay in tonsil tissue. Chromogenic DAB (top panel), fluorescent ISP staining (bottom panel).

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.

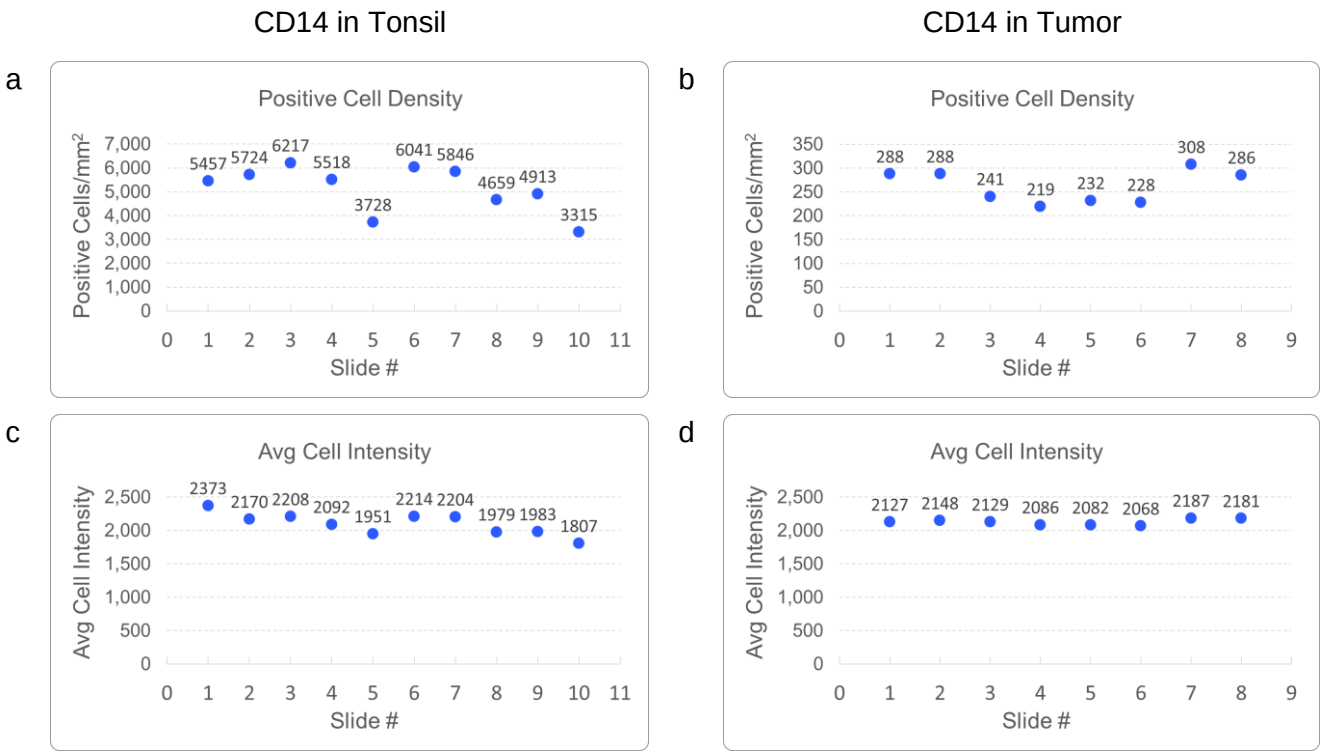


Figure 2: a. Number of positive cells/mm^2 per slide on tonsil tissue. Inter-slide coefficient of variance (CV) =18.1% **b.** Number of positive cells/mm^2 per slide on NSCLC tissue. Inter-slide CV = 12.3% **c.** Mean positive signal intensity per slide on tonsil tissue. Inter-slide CV = 7.6%. **d.** Mean positive signal intensity per slide on NSCLC tissue. Inter-slide CV = 2.0%.

References

1. Bajpai, Geetika et al. “The human heart contains distinct macrophage subsets with divergent origins and functions.” *Nature medicine,* vol. 24,8 (2018): 1234-1245. **DOI:** 10.1038/s41591-018-0059-x
2. Takahashi, Yoshinobu et al. “Monocyte chemoattractant protein 1 expression and proliferation in primary central nervous system lymphoma.” *Oncology letters,* vol. 14,1 (2017): 264-270. **DOI:** 10.3892/ol.2017.6122
3. Hamada, Daisuke et al. “Suppressive Effects of Insulin on Tumor Necrosis Factor-Dependent Early Osteoarthritic Changes Associated With Obesity and Type 2 Diabetes Mellitus.” *Arthritis & rheumatology* (Hoboken, N.J.) vol. 68,6 (2016): 1392-402. **DOI:** 10.1002/art.39561