

Biomarker Datasheet

Human CD56 U-VUE[®] Biomarker

CD56, also known as neural cell adhesion molecule (NCAM) is a transmembrane glycoprotein often considered a marker of neural lineage commitment due to its discovery site. CD56 expression is most strongly associated with natural killer (NK) cells but it has also been detected on other lymphoid cells, including gamma delta ($\gamma\delta$), T cells and activated CD8+ T cells, as well as dendritic cells.

Overview

Target	Other names	Isotype	Primary cell type	Subcellular location	Positive control(s)
CD56	NCAM1, NCAM	Rabbit IgG	Natural killer cells	Plasma membrane	Tonsil/ Spleen

*Clone available upon request

Quality Control

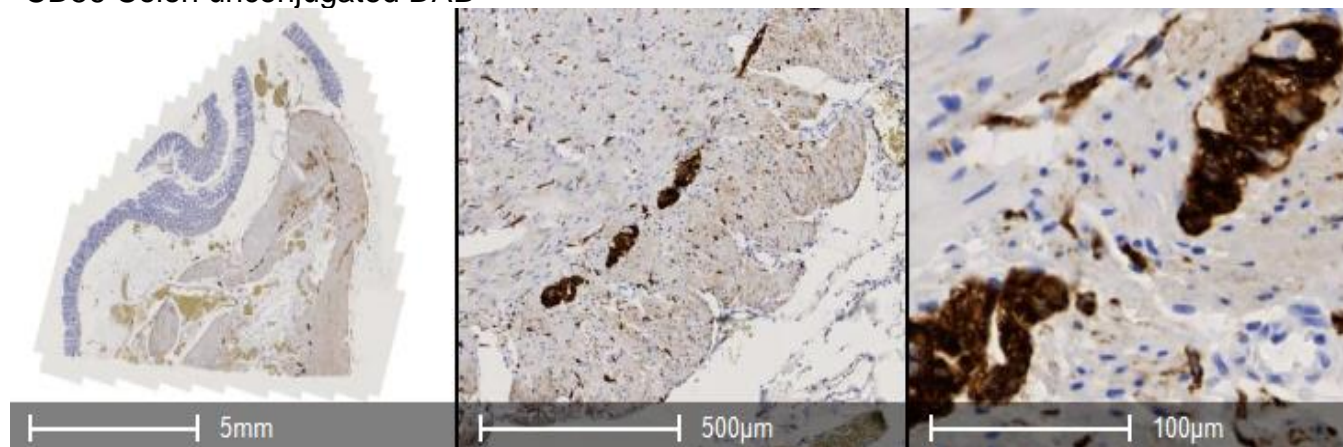
Each lot of antibody conjugate reagent is tested on positive control tissue and reviewed by reviewed by Ultivue's pathologists and scientists to ensure appropriate staining pattern and signal intensity by both qualitative and quantitative review.



Predicate Comparison

Serial sections of colon 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.

CD56 Colon unconjugated DAB



CD56 Colon ISP

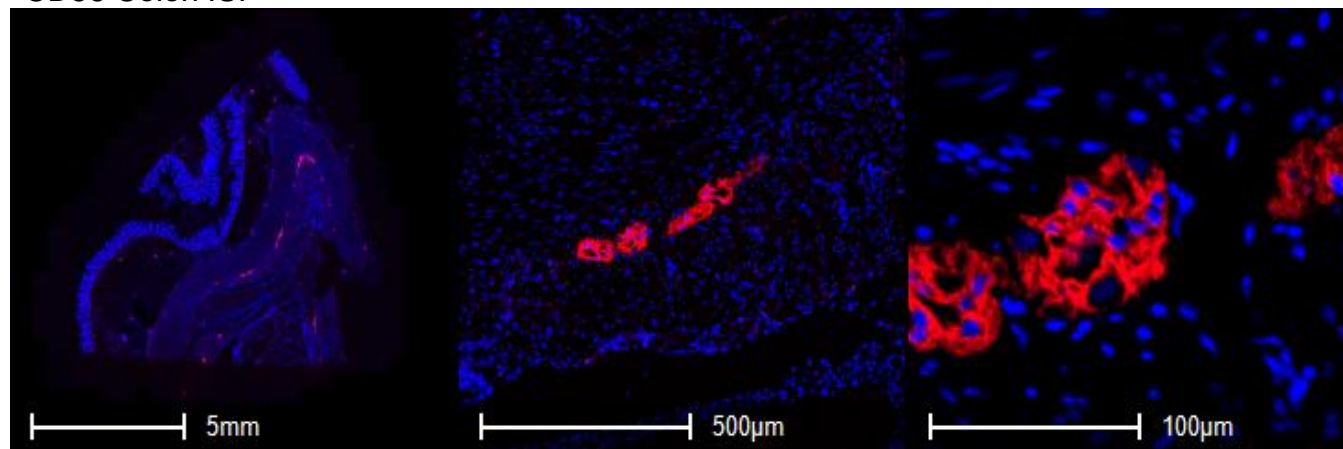


Figure 1: Comparison of unconjugated DAB and InSituPlex[®] monoplex assay in colon tissue. Chromogenic DAB (top panel), fluorescent ISP staining (bottom panel).

Assay Reproducibility

An InSituPlex[®] monoplex assay was performed across serial sections of colon 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.

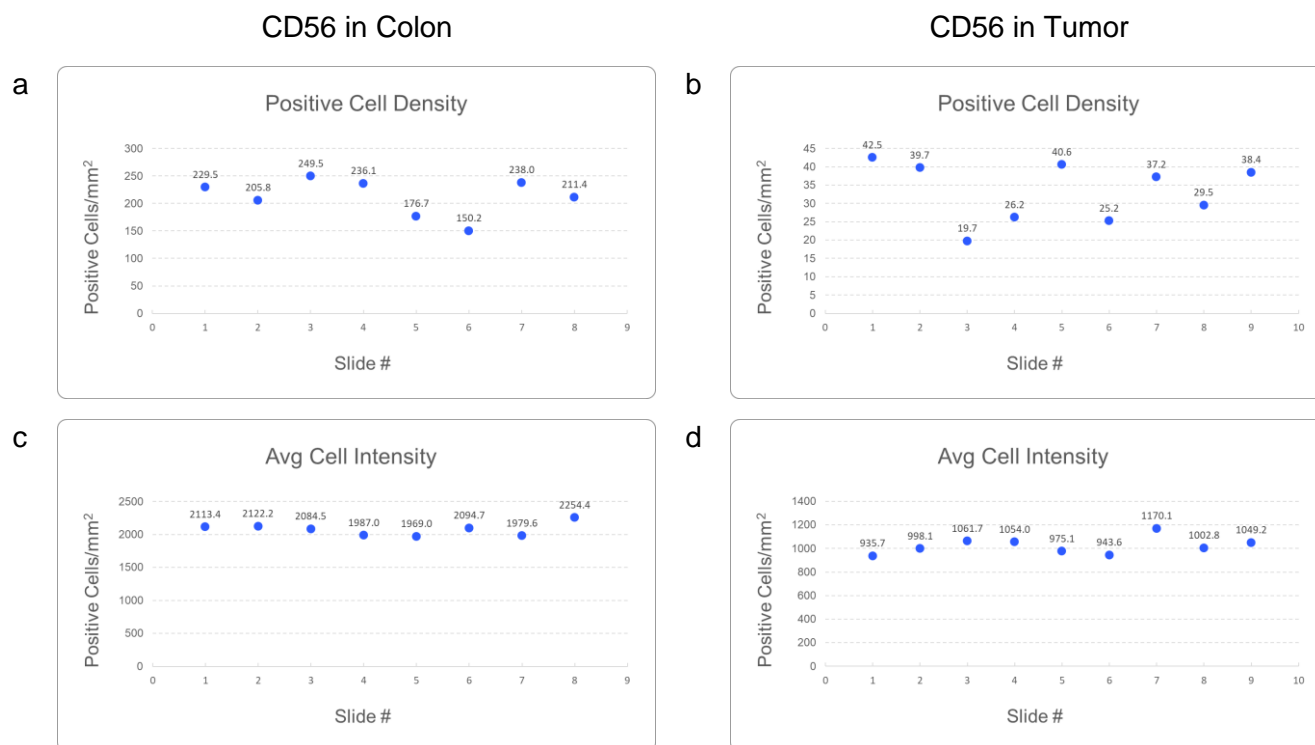


Figure 2: **a.** Number of positive cells/mm² per slide on colon tissue. Inter-slide coefficient of variance (CV) =15.0% **b.** Number of positive cells/mm² per slide on NSCLC tissue. Inter-slide CV = 23.2% **c.** Mean positive signal intensity per slide on colon tissue. Inter-slide CV = 4.3%. **d.** Mean positive signal intensity per slide on NSCLC tissue. Inter-slide CV = 6.7%.

References

1. Liu, S., Galat, V., Galat, Y., Lee, Y., Wainwright, D., & Wu, J. (2021). NK cell-based cancer immunotherapy: from basic biology to clinical development. *Journal of hematology & oncology*, 14(1), 7. <https://doi.org/10.1186/s13045-020-01014-w>
2. Rezaeifard, S., Talei, A., Shariat, M., & Erfani, N. (2021). Tumor infiltrating NK cell (TINK) subsets and functional molecules in patients with breast cancer. *Molecular immunology*, 136, 161–167. <https://doi.org/10.1016/j.molimm.2021.03.003>
3. Taouk, G., Hussein, O., Zekak, M., Abouelghar, A., Al-Sarraj, Y., Abdelalim, E. M., & Karam, M. (2019). CD56 expression in breast cancer induces sensitivity to natural killer-mediated cytotoxicity by enhancing the formation of cytotoxic immunological synapse. *Scientific reports*, 9(1), 8756. <https://doi.org/10.1038/s41598-019-45377-8>