

Biomarker Datasheet

Human FoxP3 U-VUE[®] Biomarker

FoxP3, or Forkhead Box P3 is a transcription factor important in the development and inhibitory function of regulatory T cells (Tregs). FoxP3 functions by inhibiting cytokine production and T cell effector function, thus playing a crucial role in maintenance of immunological tolerance and control of immune responses against tumors and pathogens.

Overview

Target	Other names	Isotype	Primary cell type	Subcellular location	Positive control(s)
FoxP3	AIID, DIETER, IPEX, JM2, PIDX, SCURFIN, XPID	Mouse IgG1	Regulatory T cells	Nuclear	Tonsil, Spleen, Lymph Node

*Clone available upon request

Quality Control

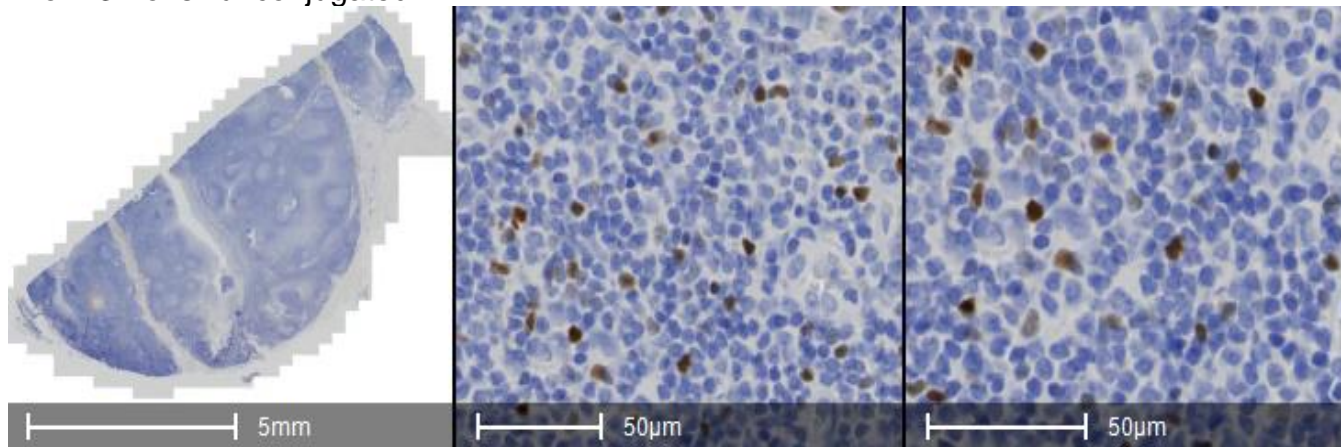
Each lot of antibody conjugate reagent is tested on positive control tissue and reviewed by Ultivue's pathologists and scientists to ensure appropriate staining pattern and signal intensity by both qualitative and quantitative review.



Predicate Comparison

Serial sections of tonsil and tumor tissue controls are stained with traditional chromogenic DAB using unconjugated antibodies and InSituPlex® (ISP) monoplex assay to demonstrate concordance between staining modalities.

FoxP3 Tonsil unconjugated DAB



FoxP3 Tonsil ISP

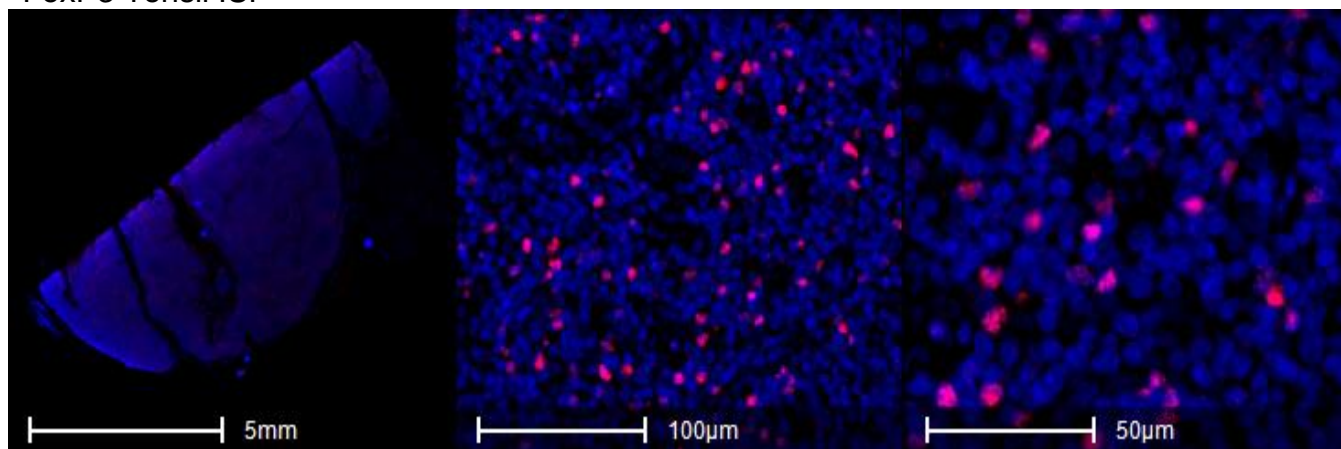


Figure 1: Comparison of unconjugated DAB and the InSituPlex® monoplex assay in tonsil tissue. Chromogenic DAB (top panel), fluorescent ISP staining (bottom panel).

Assay Reproducibility

An InSituPlex® monoplex assay was performed across serial sections of tonsil and 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.

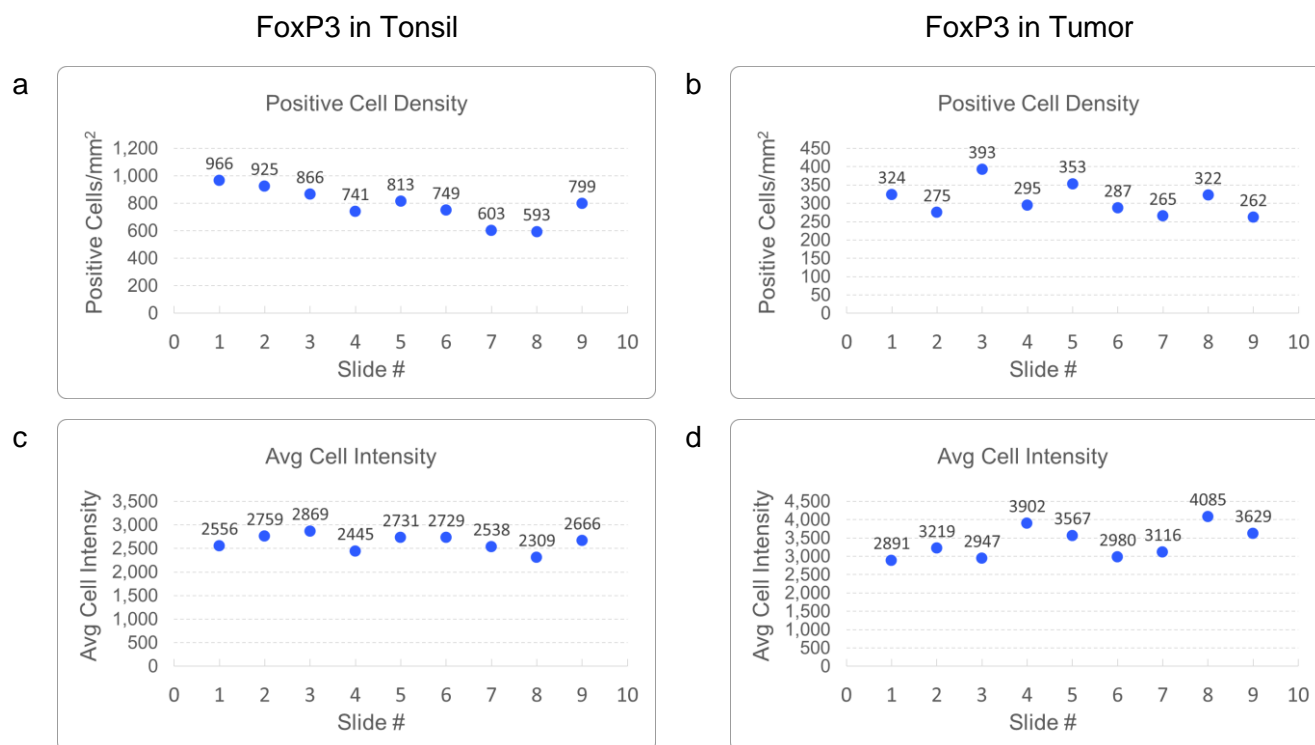


Figure 2: **a.** Number of positive cells/mm² per slide on tonsil tissue. Inter-slide coefficient of variance (CV) = 14.2% **b.** Number of positive cells/mm² per slide on CRC tissue. Inter-slide CV = 13.7% **c.** Mean positive signal intensity per slide on tonsil tissue. Inter-slide CV = 5.2%. **d.** Mean positive signal intensity per slide on CRC tissue. Inter-slide CV = 10.7%.

References

1. Dees, S., Ganesan, R., Singh, S., & Grewal, I. S. (2021). Regulatory T cell targeting in cancer: Emerging strategies in immunotherapy. *European journal of immunology*, 51(2), 280–291. <https://doi.org/10.1002/eji.202048992>
2. González-Navajas, J. M., Fan, D. D., Yang, S., Yang, F. M., Lozano-Ruiz, B., Shen, L., & Lee, J. (2021). The Impact of Tregs on the Anticancer Immunity and the Efficacy of Immune Checkpoint Inhibitor Therapies. *Frontiers in immunology*, 12, 625783. <https://doi.org/10.3389/fimmu.2021.625783>
3. Jiang, M., Wu, C., Zhang, L., Sun, C., Wang, H., Xu, Y., Sun, H., Zhu, J., Zhao, W., Fang, Q., Yu, J., Chen, P., Wu, S., Zheng, Z., He, Y., & Zhou, C. (2021). FOXP3-based immune risk model for recurrence prediction in small-cell lung cancer at stages I-III. *Journal for immunotherapy of cancer*, 9(5), e002339. <https://doi.org/10.1136/jitc-2021-002339>