HISTOWIZ

Enhancing Tonsil Analysis with Cell IDx Chromogenic Multiplex IHC

Chromogenic Multiplex Immunohistochemistry (IHC) is an advanced staining technique used to simultaneously detect and visualize multiple biomarkers within a single tissue section. Unlike traditional single IHC, which can only detect one target at a time, chromogenic multiplex IHC uses multiple chromogens (colored substrates) to label different antigens. Here, we discuss how HistoWiz uses Cell IDx for Chromogenic Multiplex IHC.

The Challenge

Analyzing human tonsil tissue using single Immunohistochemistry (IHC) presents significant challenges. The tonsil is densely populated with lymphocytes, making it difficult
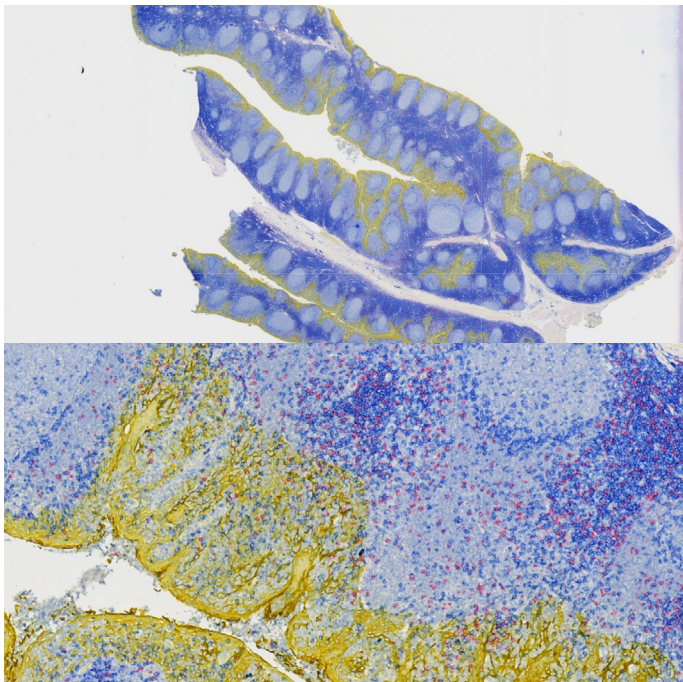
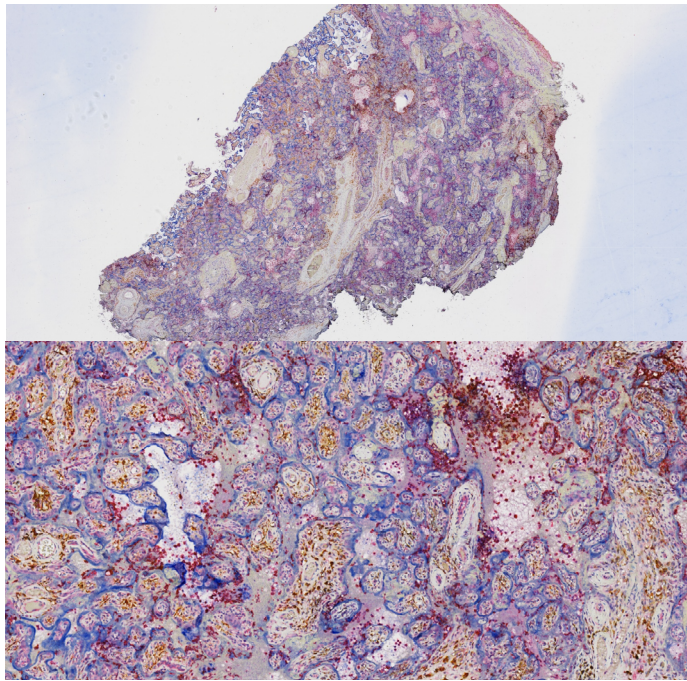*Case Example:* *Stain of Human Tonsil Cell IDx Panel CD4-CD8-PanCk*

Markers	Chromogen
CD4 (**Clone:** EPR6855)	**Blue**
CD8 (**Clone:** EPR10640(2))	**Red**
PanCK (**Clone:** AE1/AE3)	**Yellow**

to distinguish between various cell types. While multiplex immunofluorescence (mIF) can aid in differentiating these cells, it often compromises the ability to identify different tonsil regions, such as germinal centers. This limitation hampers the comprehensive understanding of tonsil morphology and its microenvironment.

The Solution

Cell IDx Chromogenic Multiplex IHC offers a robust solution to these challenges by providing a method that allows for the visualization of multiple cell types while preserving regional and morphological integrity. Key benefits of this technology include:

- **Ease of Use:** The approach is tailored to be user-friendly for researchers, ensuring ease of adoption and interpretation.
- **Compatibility with Known Chromogenic IHC Stains:** Researchers can leverage existing chromogenic IHC stains, making it easier to integrate into current workflows and build upon established knowledge.
- **Application in Dermatology and Oncology:** This technology is particularly beneficial for clients working with human dermatology or cancerous tissues, as it maintains crucial morphological insights, aiding in accurate research.
- **Automation and High-Throughput Capabilities:** The method is readily automatable, supporting high-throughput and replicable applications, thereby enhancing efficiency and consistency.
- **Affordability and Rapid Turnaround:** With a pre-set panel, the solution is cost-effective and offers rapid turnaround times, making it a practical choice for routine use.

*Case Example:* *Stain of Human Placenta using Cell IDx Panel PD-L1-CD4-PanCk*

Markers	Chromogen
PD-L1 (**Clone:** 73-10)	**Blue**
CD68 (**Clone:** C68/684)	**Red**
CD163 (**Clone:** EPR19518)	**Yellow**

The Result

Implementation of Cell IDx Chromogenic Multiplex IHC in tonsil analysis has demonstrated significant improvements in distinguishing between various lymphocyte populations while retaining the ability to identify specific tonsil regions. This has enabled more detailed morphological and regional analysis, crucial for uncovering insights. High-throughput capabilities have streamlined workflows, allowing for more efficient processing of samples without compromising on accuracy or detail.

Conclusion

Cell IDx Chromogenic Multiplex IHC presents a transformative approach to the analysis of human tonsil tissue. By overcoming the limitations of traditional single IHC and mIF, it provides a comprehensive solution that maintains morphological integrity while enhancing cell type differentiation. This method not only supports detailed and accurate analysis but also improves workflow efficiency and cost-effectiveness, making it an invaluable tool for researchers in the fields of dermatology and oncology.
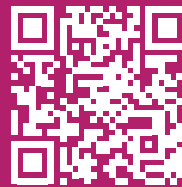
Get started and request a consultation today!
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