

Changing dermatopathology practice with specialized microscope slides at a leading French laboratory

Trajan Series 3 Adhesive microscope slides

Challenge

Cutaneous biopsy sections including skin, nails and mucous regularly detached from microscope slides with resultant tissue loss creating rework and increased turnaround time with cost implications.

Solution

Product	Trajan Series 3 adhesive microscope slides
Sample	Cutaneous and mucous specimens (skin, scalp, nail excision)
Applications	Immunohistochemistry (IHC), immunofluorescence (IF)
Site	Cabinet de Pathologie Mathurin Moreau - Dermatopathologie, Paris 75019, France

Introduction

Dermatopathology is the study of cutaneous diseases at a microscopic level. It involves microscopic examination, description and interpretation of biopsy specimens obtained from skin.

Skin is the largest organ in the human body and due to the complex architecture of skin tissue, it is amongst the most challenging tissue types to manage successfully in a histology laboratory.

Apart from skin malignancies including melanomas, squamous and basal cell carcinomas, several cutaneous lymphomas, vascular neoplasms, neuroendocrine tumors and infections can occur in skin. Therefore, provision of optimum microscope slides with stained sections can assist pathologists in routine diagnosis, prognosis, as well as research.

Multiple tissue layers with different consistencies in a full thickness skin specimen – epidermis, dermis



Figure 1. Specimen section placed on Trajan Series 3 Adhesive microscope slides on an automated immunostainer

and adipose tissue, make it difficult to handle. Clear distinction between the layers require accurate orientation during grossing and embedding. This allows the dermal-epidermal junction to be clearly visible. In addition, the adipose tissue can easily lift off the slide surface during rigorous processes involved in the immunohistochemistry (IHC) technique.

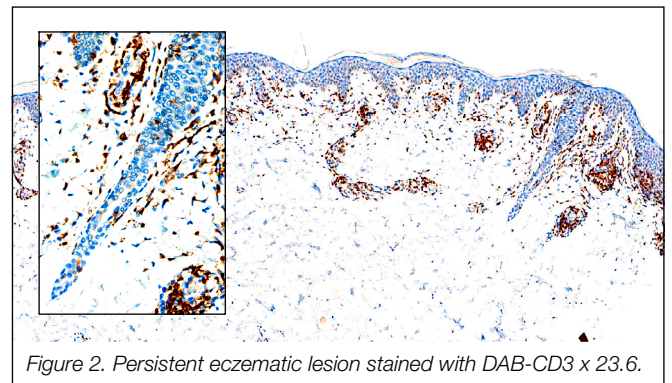


Figure 2. Persistent eczematous lesion stained with DAB-CD3 x 23.6.

Laboratory introduction

Cabinet de Pathologie Mathurin Moreau - Dermatopathologie in Paris, France, is a comprehensive, state-of-the-art laboratory that offers a variety of dermatopathology services. The original laboratory was founded in 1988 by Dr Cavelier-Balloy and is now managed by a team of pathologists including Dr Freitag-Spinner, Dr Lacoste, Dr Rivet-Le Thai, Dr Moulounguet and Dr Plantier. They are also affiliated to university hospitals and have teaching responsibilities. It is one of the two specialist dermatopathology reference centers in the Paris region and receives samples both from local and international countries.

“As a private lab, we now have a good understanding of Trajan’s microscope slide portfolio and this partnership with Trajan has been beneficial and timely. Benefits have included seamless provision of specialized microscope slides for different applications together with expert technical support.”

*Yassim Belgacem, Technical Lab Manager,
Cabinet de Pathologie Mathurin Moreau, Paris, France*

Background

Mr Belgacem, Technical Lab Manager at Cabinet de Pathologie Mathurin Moreau, has been involved in managing the laboratory since 2013.

Specimen sections from skin biopsies presented a serious challenge to the lab as tissue adhesion on incumbent positively charged microscope slides was subpar, especially during immunohistochemistry (IHC) processing. This led to increased time and effort being spent in re-cutting sections and repeat staining.

Series 3 adhesive slides from Trajan offer enhanced tissue retention, especially for difficult specimen types like skin.

To showcase the solution, Trajan introduced the specialized slides and provided technical support during the initial validation exercise. The subsequent results corroborated slide functionality in requisite processes.

Mr. Belgacem mentioned, "Once we were satisfied that the Trajan Series 3 Adhesive microscope slides offered enhanced tissue adhesion and stain definition, especially for IHC and IF related applications, we decided to change over. Further, Trajan's flexible approach helped us in a smooth transition from our incumbent supplier."

Slide selection

Since adopting Series 3 Adhesive microscope slides from Trajan, histologists at Cabinet de Pathologie Mathurin Moreau have processed more than 3,000 cases to provide skin specimen sections to pathologists according to Mr Belgacem.

The usage of specialized slides led to consistent and reproducible results that have been noticed by the pathologists too. All tissue sections for IHC and IF are being mounted on Trajan Series 3 adhesive microscope slides.

"In addition to findings on routine H&E stains, IHC staining of sections assist the pathologist with diagnosis of difficult cases and tumor staging. As IHC has an extensive utility across cutaneous neoplasms and their differential diagnosis, it is imperative that our biomedical scientists can produce high quality stained sections."

"In this regard, Trajan has proven to be a reliable and intelligent partner. We are very pleased with

the organization and the technical expertise around microscope slides they have provided."

"Trajan has become one of our important partners when we look at pathology consumables. They clearly understood our problem at hand and recommended the right microscope slide."

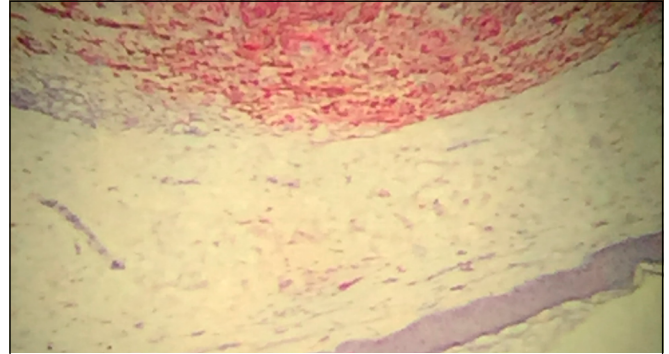


Figure 3. Excision of a proliferative nodule. PS100 with alkaline phosphatase. 40x magnification.

Saving time and tissue

"In our lab, paraffin blocks with embedded tissue are cut to produce a 4 µm thick section. The section is then mounted on a slide before drying. In our experience, Trajan Series 3 Adhesive microscope slides need drying for only 60 minutes at 55°C in an oven."

"In the past, other brands of slides used required drying for 60 minutes at 55° in an oven, followed by 2-3 hours at room temperature before they could be processed on the IHC instrument."

"The decrease in drying time together with minimal tissue loss has enabled us to run two IHC cycles each day using Trajan slides, compared to a single daily cycle previously."

"The failure rate in our laboratory is negligible and all these factors have had a profound effect on our specimen turnaround time which ultimately implies patient benefit", added Mr Belgacem.

Conclusion

Trajan Series 3 Adhesive microscope slides improve overall efficiency at a specialist dermatopathology laboratory.

- No tissue loss due to enhanced fortified adhesion capacity of the slides.
- Considerable reduction in failure rates that could be attributed to slide performance.
- Faster turnaround time to expedite provision

Conclusion continued

of patient test results whilst reduction in repeat rates and related costs.

- Additional time to run emergency samples on the same day, if required.

Acknowledgments: Dr Cavalier-Balloy, Dr Freitag-Spinner, Dr Lacoste, Dr Rivet-Le Thai, Dr Moulonguet and Dr Plantier, Co-Directors of Cabinet de Pathologie Mathurin Moreau, Paris, France.

Information and support

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