

Utility of Rabbit Monoclonal Antibodies for Immunohistochemistry on Mouse Tissue

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ABSTRACT

Immunohistochemistry on mouse tissue is problematic when mouse antibodies are used. Typically, non-specific labeling of normal mouse tissue elements with mouse Ig in the antibody preparation causes high background staining. While there are various methods and kits developed to minimize this phenomenon, they don't completely solve the problem. We show here that rabbit monoclonal antibodies do not show non-specific staining and still allow high specificity of target antigen labeling. For those antigens for which rabbit monoclonals are suitable, rabbit monoclonals prove to be the best solution.

INTRODUCTION

Rabbit monoclonal antibodies (RabMab's) are now available for nearly 20 tissue targets (1). While these antibodies were developed for human research and diagnostic use, the targets are similar to those of the mouse. Since mice are used extensively in research into human diseases, a rabbit monoclonal antibody would be advantageous over a mouse monoclonal due to the lack of extensive cross-reaction and background problems commonly seen with the latter type of antibody. Therefore, we wished to learn if any RabMab's are applicable to use on mouse tissue.

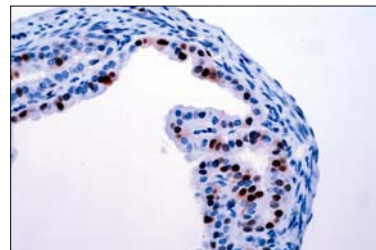


Fig. 1 Cyclin D1, RM-9104, Ovary

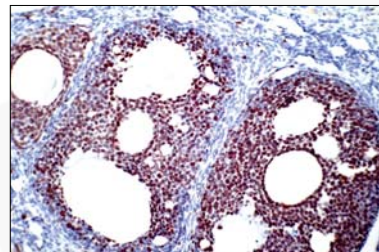


Fig. 3 Ki67, RM-9106, Ovarian follicles

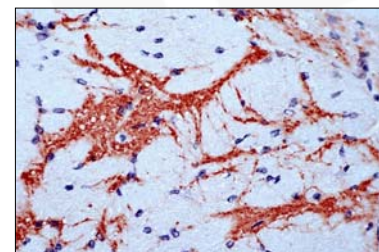


Fig. 5 Synaptophysin, RM-9111, Brain

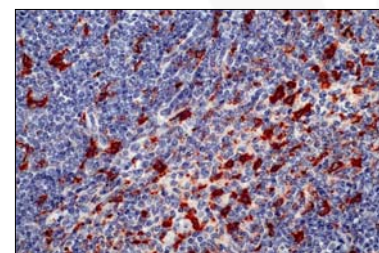


Fig. 7 COX 2, RM-9121, Spleen

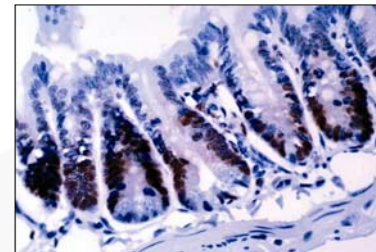


Fig. 2 Cyclin D1, RM-9104, Small Intestine

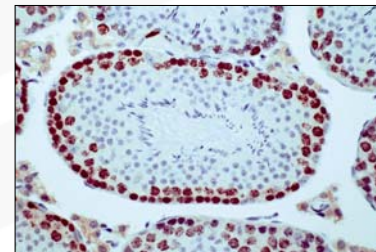


Fig. 4 Ki67, RM-9106, Testis

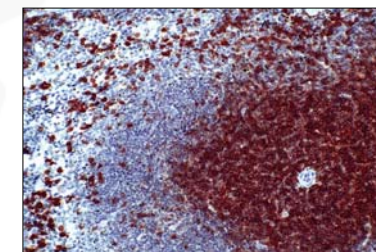


Fig. 6 CD3, RM-9107, Spleen

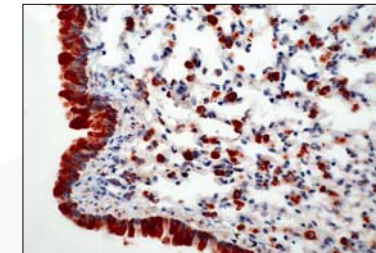


Fig. 8 COX 2, RM-9121, Lung

METHODS

Mouse tissue arrays (Biochain Institute, Hayward, CA) were used to test the following rabbit monoclonal antibodies (all from Lab Vision Corp. Fremont, CA):

Antibody	Catalog #	Dilution	Clone
Cyclin D1	RM-9104	1:50	SP4
Ki67	RM-9106	1:200	SP6
CD3	RM-9107	1:200	SP7
Synaptophysin	RM-9111	1:200	SP11
COX2	RM-9121	1:100	SP21

Each antibody was pretreated by boiling for 10 minutes in Citrate Buffer, pH 6.0. The primary was applied for 30 minutes. All primaries were detected with a biotinylated goat anti-rabbit secondary antibody, Streptavidin/HRP tertiary step and AEC chromagen (10 min each, all reagents from Lab Vision). All slides were stained on the Lab Vision 480 Autostainer.

Results

Figures 1 – 8 demonstrate the results of immunostaining mouse tissue with rabbit monoclonal antibodies.

Conclusion

We found that several rabbit monoclonal antibodies are suitable for use on mouse tissue.

References

- 1) Lab Vision Corporation catalog, 2004. www.labvision.com.