

# Comparison of Rabbit Monoclonal Antibodies to their Mouse Monoclonal Analogs

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## ABSTRACT

It has been known for many years that the rabbit polyclonal antibodies are more sensitive than mouse antibodies for various antigens in tissue sections, but often show more non-specific labeling. Conversely, monoclonal antibodies are known to be more specific than polyclonal antibodies, but often lack sensitivity. Rabbit monoclonal antibodies (RabMAB's) have been shown to have greater sensitivity than mouse monoclonals (MoMAB's) for many antigens, and are as specific as a mouse monoclonals. Here we compare the immunohistochemistry of rabbit monoclonals to their mouse monoclonals analogs. Rabbit monoclonals show real increases in sensitivity and none of the non-specific labeling common to polyclonals.

## INTRODUCTION

Rabbit monoclonal antibodies are recent development for diagnostic immunohistochemistry (1). Rabbit antibodies have been shown to have greater sensitivity and avidity when compared to mouse antibodies (2,3). Additionally, some RabMAB's have been shown to be better predictors of prognosis than their MoMAB counterparts (4). If this is so then rabbit monoclonal antibodies may be an attractive alternative to mouse monoclonals for diagnostic use. In this study we compared RabMAB's to MoMAB's that are currently popular in many pathology laboratories to determine if rabbit monoclonals are a suitable substitute.

## METHODS

Five RabMAB's from Lab Vision Corp. were paired with commercially available MoMAB analogs. The pairings are shown in Table 1.

Each antibody was applied to a control slide previously determined to be optimal for positive reactions. All immunohistochemistry was performed in the same run under identical conditions except for the dilution of the primary antibody.

Each tissue section was pretreated by boiling for 10 minutes in Citrate Buffer, pH 6.0. The primary antibody was applied to each section for 30 minutes at previously determined optimal dilutions (Table 2). All primaries were detected with a biotinylated polyvalent secondary antibody, Streptavidin/HRP tertiary step and AEC chromagen (10 min each, all reagents from Lab Vision). And counterstained with Mayer's hematoxylin. All slides were stained on the Lab Vision 720 Autostainer.

Digital micrographs were obtained using a Micropublisher 3.0 camera. Corresponding areas of each tissue section were compared. No image processing or manipulation, beyond cropping, was performed on any image.

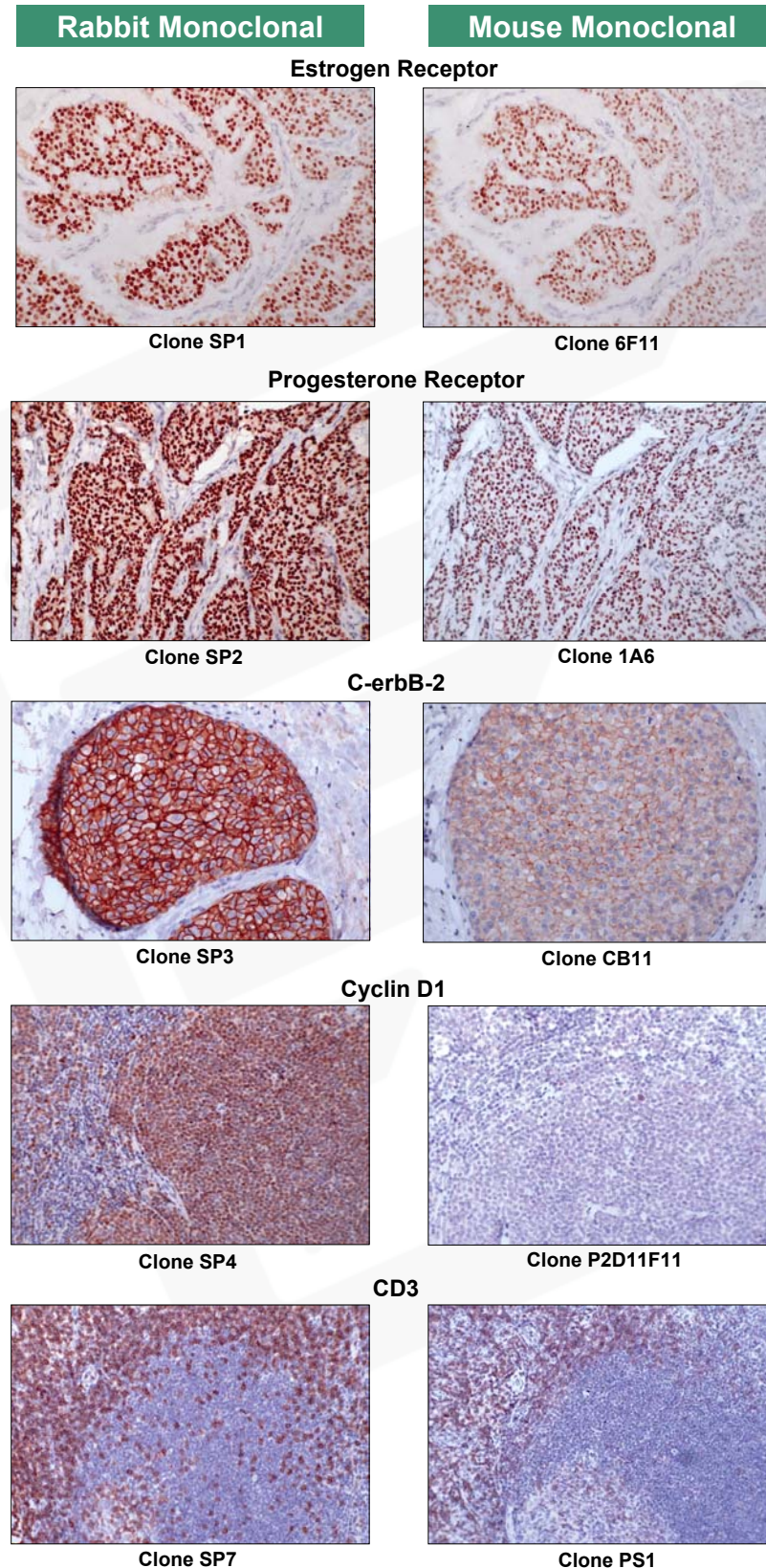


Table 1		Antibody Pairing	
Target	Tissue	RabMAB Clone	MoMAB Clone
ER	Breast Carcinoma	SP1	6F11
PR	Breast Carcinoma	SP2	1A6
c-erbB2	Breast Carcinoma	SP3	CB11
Cyclin D1	Mantle Cell Lymphoma	SP4	P2D11F11
CD3	Tonsil	SP7	PS1

Table 2		Antibody Dilutions		
Target	RabMAB Clone	Dil.	MoMAB Clone	Dil.
ER	SP1	1:100	6F11	1:50
PR	SP2	1:100	1A6	1:50
c-erbB2	SP3	1:100	CB11	1:50
Cyclin D1	SP4	1:100	P2D11F11	1:50
CD3	SP7	1:300	PS1	1:50

## Results

Results obtained are shown in Figures 1-X. In all cases the rabbit monoclonal antibody show a stronger signal than its' mouse monoclonal analog.

## Conclusion

In this study RabMAB's gave stronger staining than MoMAB's. For the antibodies tested, rabbit monoclonal antibodies are a suitable alternative to mouse monoclonals in the clinical pathology laboratory.

## References

- **Rabbit monoclonal antibodies: generating a fusion partner to produce rabbit-rabbit hybridomas.** Proc Natl Acad Sci U S A. 1995 Sep 26;92(20):9348-52
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