

VALIDATION OF A FAST SIMPLIFIED HARRIS-SCHORR STAINING TECHNIQUE FOR VAGINAL SMEARS IN THE BITCH

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INTRODUCTION

Colpocytology (vaginal smears) is a simple and economical technique to assess an oestrogenic impregnation in bitches showing a physiological or pathological vulvar discharge. In their daily practice many veterinarians stain their smears with a monochrome staining technique (often Diff-Quick) which necessitates a careful cytological interpretation. Harris-Schorr staining technique offers an easier interpretation as oestrogenic action on vaginal cells transforms intra-cytoplasmic keratin precursors into acidophilic keratin, which appears orange-red under the microscope. The cytoplasm of cells under differentiation due to oestrogenic influence appear partly (polychromatophilic) or completely (acidophilic) red while other cells keep a blue cytoplasm. Although a commercial simplified Harris-Schorr technique is available (Kit Diagnoestrus® - RAL Diagnostics-France), very few veterinarians use it as the procedure lasts quite long (around 16 minutes). The objectives of this study were to reduce the length of the Kit Diagnoestrus® staining technique at 2 minutes instead of 16 and to compare its concordance with the original procedure.

MATERIAL AND METHODS

A total of 98 vaginal smears (using a sterile cotton swab without a speculum) were performed in 51 bitches at different stages of the sexual cycle. For each smear, the vaginal cells were deposited on two glass slides (one to be stained by Kit Diagnoestrus®, the other by the fast simplified technique) by gently rolling the swab and fixed by a cyto-spray. Each slide was coded by a computerized randomization in order that the person reading the slides could not know which bitch/stage of the cycle/staining procedure was concerned and identified with this code. 51 smears were stained by Kit Diagnoestrus® and 51 by the simplified technique (consisting of using the same staining kit but drastically reducing the time: each slide was dropped 5 to 10 times only in each solution). 98 smears were examined microscopically at low (x40) and high magnification (x100) by an experimented cytologist. The eosinophilic index (IE= number of acidophilic cells/total number of cells) was determined for each slide by counting and identifying at least 30 cells in at least 3 fields under high magnification (x100). The Lin concordance coefficient (CCL) (1) was used to evaluate the correlation between the two staining techniques. Results: according to the CCL, the concordance of eosinophilic index between the two techniques was "very high".

DISCUSSION

Care must be taken in reading the slides because it appeared that the blue and red colors with the simplified technique became paler after a few days, making it mandatory to read the slides on the day they were stained.

CONCLUSION

This study shows that a simplified fast Harris-Schorr staining technique is as reliable as the commercial Kit Diagnoestrus® one and could be used daily in veterinary clinics in the course of canine gynecological consultations.

REFERENCE

(1) Lin L, Heyadat AS, Wu W. A unified approach for assessing agreement for continuous and categorical data. J Biopharm.Stat. 2007, 17: 629-652.

value of Lin's Concordance Correlation Coefficient	interpretation of value	value of Lin's Concordance Correlation Coefficient	interpretation of value
< 0,50	unacceptable	Parabasale	0,46 unacceptable
0,51 - 0,60	Bad	Intermediate basophile	0,73 acceptable
0,61 - 0,70	mediocre	Intermediate polychromatophilic	0,41 unacceptable
0,71 - 0,80	acceptable	Keratinized	0,3 unacceptable
0,81 - 0,90	rather good	Eosinophilic Index	0,92 very good
0,91 - 0,95	very good		
> 0,95	excellent		

* LA COLORATION DES FROTTIS VAGINAUX CHEZ LA CHIENNE : ÉTUDE DE L'EFFICACITÉ D'UN NOUVEAU PROTOCOLE DE HARRIS SCHORR SIMPLIFIÉ A-L DUTEY ENVA 2015



16 mn





2 mn ONLY

Diagnoestrus®	Solutions	Diag-Cestro®
10 Minutes	Rinsing Solution N°1	5 immersions
10 immersions	distilled water	5 immersions
1 minute	Hematoxylin	5 immersions
10 immersions	distilled water	5 immersions
1 minute	Differentiator	5 immersions
10 immersions	Rinsing Solution N°2	5 immersions
2 minutes	Shorr reagent	10 immersions
10 immersions	Rinsing Solution N°3	5 immersions

Pairs of smears issued from the same swab. Magnification x 100
Pictures A-L DUTEY*

Smear stained with Diagnoestrus® protocol in 16 minutes

Smear stained with Diag-Cestro® protocol in 2 minutes

