

DEDICATION

To the soul of Aisha

To my parents for their endless love,
support and encouragement

To my husband who has been a great
source of motivation and inspiration

To my brothers and sisters

To my lovely kids Ahmad & Hiba

ACKNOWLEDGMENT

First of all I thank God for making my entire wild dream true.

This thesis would not have been possible without help, support and patience of my supervisor, Prof. Hussain Gad alkareem Ahmad. I would like to thank him with great deal of respect.

I would like to sincerely thank my co. supervisor Dr. Mohammed Siddig for his guidance support throughout this study, and especially for his confidence.

Special thank for Fatima Magzob and Nada Saleh from Khartoum Radioisotope Center, Sana Awad and Sara Hammad from Veterinary Medical Collage, University of Khartoum for their help in sectioning, processing and microtome.

I gratefully acknowledge to the help of all my colleagues from International University of Africa especially Mohammed Alameen and Abdulla Alshareef

Also I acknowledge the role of my colleagues Aisha Osman and Dalia Mohamed Osman from Alzaeem Alazhary University for their assistance in tissue processing .

Abstract:

This study was conducted in Sudan University of Science and Technology . During the period from January 2011 to December 2012. To assess the effect of tissue fixation temperatures on subsequent histochemical staining.

Rabbit samples were collected to examine the influence of varying fixatives temperatures on the quality of staining of some rabbit organs include lung to demonstrate reticular fiber using Gordon and Sweets, tongue to demonstrate collagen fibers using Van Geison's stain, aorta to demonstrate elastic fibers using Verhoff's stain, large intestine to demonstrate mucin using Alcian blue and liver to demonstrate cell morphology using Erlich's and Weigert's hematoxylin and glycogen using PAS. Specimens were divided into pieces, each sample was fixed in the following fixatives: formal saline, neutral buffer formaldehyde, Carnoy's and Bouin's fixative at different temperatures 4 °C , 25° C, 37 °C and 60°C. thereafter, tissues were paraffin - embedded and 5 micron sections were cut using rotary microtome and stained with different histochemical staining includes Ehrlich's hematoxylin, Weigert's hematoxylin, Feulgen, Van Gieson, Gordon and Sweet's, Verhoeff's, Periodic Acid Schiff and Alcian Blue.

For Erlich's hematoxylin, formal saline gave the best result for tissues fixed at 60°C, NBF gave the best results at 37° C and 60°C. For Weigert's hematoxylin, formal saline gave

better results at 37°C, NBF gave better results at 37° C and 4°C. For feulgen stain the best results were obtained at 37°C when fixed in formal saline. And when fixed in neutral buffer formaldehyde, better results were obtained at 37°C. For Van Geison stain , formal saline and NBF the best results obtained at 37° C For Gordon and sweet, Formal saline fixative gave better results at 37°C but NBF gave better result's at 25°C and 4C. For Verhoff's stain, Formal saline fixative gave the best results at 4°C , 37°C and 60°C. NBF gave the best results at 37°C whereas Bouin's and Carnoy's fixative gave the best results at all temperatures. PAS formal saline fixative gave the best results at 4° C but NBF fixative gave better results at 37° C. In alcain blue stain formal saline fixative gave better results at 37°C and 60°C, but the best results were obtained at 37°Cwhen fixed by NBF.

ملخص الأطروحة

أجريت هذه الدراسة في جامعة السودان للعلوم والتكنولوجيا. في الفترة من يناير 2011 إلى ديسمبر 2012. لتقييم أثر درجة حرارة المثبتات على الخطوات اللاحقة لتصبغ الانسجة كيميائياً.

تم تحديد تأثير تغيير درجة حرارة المثبتات على نوعية التصبغ لبعض العينات المأخوذة من أجهزة أرنب تشمل: الرئة لإظهار الألياف الشبكية باستخدام طريقة غوردون وسويت و اللسان لإظهار ألياف الكولاجين باستخدام طريقة فإن جيسون و الشريان الأورطي لإظهار الألياف المرنة باستخدام طريقة بيرهوف و الأمعاء لإظهار الميوسين باستخدام طريقة السيان الأزرق والكبد لإظهار مورفولوجيا الخلايا باستخدام طريقة الايرليخ و ويجيرت هيماتوكسلين والجليكوجين باستخدام طريقة حمض البيريوديك والشيف، تم تقسيم العينات إلى قطع. وكل عينة ثبتت في المثبتات التالية: الفورمالين الملحي، الفورمالين المدرؤ، كارنوي و بوين في درجات حرارة مختلفة شملت 4 ° ، 25 ° ، 37 ° ، و 60 °. بعد ذلك، طمرت الأنسجة في شمع البارافين وقطعت إلى 5 ميكرون باستخدام الميكروتوم الدوار وصبغت بأصباغ كيمياء الأنسجة التي تشمل ايرليخ هيماتوكسيلين، ويجيرت هيماتوكسلين، فولجن، فان جيسون، غوردون وسويت، بيرهوف وحمض البيريوديك شيف والأزرق السيان.

في نتائج إيرليخ هيملتوكسيلين: أعطى الفورمالين الملحي أفضل النتائج
للأنسجة المثبتة في 37° و 60°. وفي نتائج ويجيرت هيملتوكسيلين :
الفورمالين الملحي أعطى نتيجة أفضل في 37° والفورمالين المدروء أعطى
أفضل النتائج في 37° و 4°. وفي الفولجن: أفضل النتائج التي تم الحصول
عليها في 37° عندما ثبت في الفورمالين الملحي . وعندما ثبت في
الفورمالين المدروء، أفضل النتائج تم الحصول عليها في 37° ، في فان
جيسون : أعطى كل من الفورمالين الملحي والفورمالين المدروء نتائج
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وكانروي اعطي نتيجة جيدة في جميع درجات الحرارة. وفي حمض
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List of abbreviations

NBF: neutral buffer formalin.

PAS: periodic acid schiff.

ECM: Extracellular matrix

GAG: glucosaminoglycans.

SPSS: Statistical Package For Social Science