

# Dedication

To:

My mother, to the soul of my  
father,

To my family,

Teachers,

&

Colleagues.

# Acknowledgements

My grateful thank to Dr. Hussian Gad Elkarim Ahmed, for his close supervision.

My gratitude is extended to my wife for support and encouragement.

thanks and due to Ustaz: Hussein Hamed for his technical support.

My thanks to Ustaz: Sharaf for continuously help.

My gratitude extends to the staff of the Histopathology and Cytology Department at Sudan University for Science and Technology.

My thankful to my Brothers and my sister for encouragement and advice.

As well my thankful to my colleagues.

## II **ABSTRACT**

This is an experimental study to assess the preservation of nucleic acids in three types of tissues by the use of five different fixatives. The study was conducted in Elobied during the period from April 2010 to august 2010. Blocks were obtained from rabbit tissue, Formal saline, Buffer Formalin, Carnoy's, Methacarn and Elseriow's fixatives were used. Intestinal. Tongue and liver tissues were taken from a rabbit. Three temperatures of fixation were selected 37°C, 25°C and 4°C.

After application Feulgen and Methyl Green Pyronin for nucleic acids quantification, Carnoy's fixative gave high nucleic acids preservation and so was Methacarn fixative. Elseriow's fixative, which was used for the first time in this study gave excellant nucleic acids preservation; whereas, Formal saline and Buffer formalin were gave acceptable results in nucleic acids preservation.

When tissues fixed at 37°C the amount of preserved nucleic acids was more than these detected at other temperatures, although, results obtained at 25°C was good. Formalin containing fixatives i.e. formal saline and buffer formalin gave good results at 4°C.

Although, the nucleic acid of all tissue was best preserved, the intestinal tissue gave better result followed by liver and lastly the tongue.

### III

#### **ملخص الدراسة**

هذه دراسة تجريبية لتقييم حفظ الاحماض النووية في ثلاثة انواع من الانسجة باستخدام خمسة انواع مختلفه من المثبتات. أجريت هذه الدراسة بالابيض في الفترة بين ابريل 2010م وحتى اغسطس 2010م.

اخذت الكتل من أنسجة ارنب الفورمالين الملحي، الفورمالين المدرؤ، الميثاكارن، كارنوي و السريو استخدمت فيه كمثبات. الامعاء، اللسان و الكبد اخذت من ارنب. تم تثبيت الانسجة فى درجات حراره مختلفه 25، 37 و 4. بعد عمل تفاعل فولجن والميثيل الاخضر والبايرونين لتحديد كمية الاحماض النووية. اظهر مثبت كارنوي كفاءة عالية في حفظ الاحماض النووية، والميثاكارن. مثبت السريو الذى استخدم لأول مره اعطى نتائج اظهر كفاءة عالية فى حفظ الاحماض النووية. الفورمالين المدرؤ والفورمالين الملحي اعطيا نتائج مقبوله فى حفظ الاحماض النووية. عند تثبيت النسيج فى درجة حراره 37 كانت كميه الاحماض النووية المحفوظة أكثر من تلك المحفوظة في الدرجات الاخرى، بالرغم من ان النتائج

المتحصل عليها فى درجه 25 كانت جيده. المثبتات المحتويه على الفورمالين  
ونعنى بها الفورمالين الملحى والفورمالين المدرؤ اعطت حفظ جيد للاحماض  
النوويه فى درجه حرارة 4. بارغم من ان الحمض النووى فى كل الانسجة  
كان تثبيته بصورة جيده الا ان نسيج الامعاء كان الافضل ويليه نسيج الكبد  
واخيرا اللسان.

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