

**Evaluation Histochemical of Mucins in Female Breast Tumors  
by Alcian blue and PAS in Kosti Oncology Center (2024)**

**Marwa Salih Salih Shawkat**

**Supervision committee:**

<b>Name:</b>	<b>Position</b>	<b>Signature</b>
<b>Dr. Ahmed Ibn Edriss Mohamed</b>	Main supervisor	.....
<b>Dr. Abazar Mahmoud Ismail</b>	Co- supervisor	.....

**Date:** ...../...../.....

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**Examination Committee:**

<b>Name:</b>	<b>Position</b>	<b>Signature</b>
.....	Chair Person	.....
.....	External Examiner	.....
.....	Internal Examiner	.....

Date of Examination: ...../...../.....

## **Declaration**

I hereby declare that this thesis is my own original work, and wherever contributions of others are involved, every effort is made to indicate this clearly with references and acknowledgment. The results embodied in this thesis have not been submitted to any other University or Academic Institution for the award of any scientific degree.

**Candidates name:**

**Signature**

**Marwa Salih Salih Shawkat**

.....

**Kosti, White Nile State, Sudan**

**Date:** ...../...../.....

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**Candidates name:**

**Signature**

**Marwa Salih Salih Shawkat**

.....

**Kosti, White Nile State, Sudan**

**Date:** ...../...../.....

## **Dedication**

To the one who taught me to give without expecting anything, to the one who made years of effort so that we could be in the highest position, to the one whose name I carry with pride, my dear father, may God have mercy on His soul..

To the one who was my second mother, who was my shelter at all times, my dear aunt Ekhlis, may God have mercy on her soul.

To the one who was the best teacher, the best educator, the best support, the best brother and spiritual father of the Department of Histopathology and Cytology in EL Imam EL Mahdi University , words fail to describe that exception, Dr. Ahmed Ibn Edriss, may God have mercy on his soul.

## **Acknowledgement**

We did not take the beginnings except with His guidance , we did not reach the ends except with His success, and we did not achieve the goals except with His grace. So praise be to God, with love ,thanks, and gratitude for the beginning and the end.

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I would like to thanks everyone who helped me to complete this research , even if it was by providing advice and guidance.

## **Evaluation Histochemical of Mucins in Female Breast Tumors by Alcian blue and PAS in Kosti Oncology Center (2024).**

**Marwa Salih Salih Shawkat**

## Abstract

Breast tumors are abnormal growth in breast tissue it can be benign or malignant. Breast cancer is second type of cancers that leading death globally. In Sudan is the most common type in women. This study aim to evaluate the histochemical expression of mucin in female breast tumors using Alcian blue and PAS staining method. A descriptive cross sectional study was conducted on 60 samples there ages between (13-95) at Histopathology lab of National Health Insurance Fund in Kosti City White Nile State. The samples was embedding ,sectioning, staining, microscopically examined and the results obtained were statistically analyzed using SSPS. The study showed that common type of tumors was fibroadenoma (38.3%) all expressed acid and neutral mucins , then fibrocystic change (28.3%) also all expressed acid and neutral mucins, while phylloide tumor, chronic mastitis ,ductectasia , intraductal papilloma and ductal hyperplasia all was represented (1.7%) for each type and all expressed acid and neutral mucins, while atypical hyperplasia (1.7%) expressed neutral mucin only. Invasive ductal carcinoma grad III (11.7 %), (10%) of them expressed neutral mucin only except (1.7%) expressed acid and neutral mucins, invasive ductal carcinoma grad II (10%) all expressed neutral mucin only ,while lobular carcinoma was (1.7%) expressed acid and neutral mucins . The study indicates that mucin expression may serve as a useful marker in differentiating benign from malignant breast tumors .

التقييم الهستوكيميائي للميوسين في اورام الثدي لدي الاناث باستخدام صبغة الالشين  
الأزرق وحمض البريودك مع محلول الشيفز في مركز كوستي للأورام (2024) .

مروة صالح صالح شوكت

الخلاصة

اورام الثدي هي نمو غير طبيعي في انسجة الثدي , ويمكن ان تكون حميدة او خبيثة . يعد سرطان الثدي ثاني نوع من السرطانات التي تؤدي الي الوفاة عالميا, وهو النوع الأكثر انتشارا بين النساء في السودان . تهدف الدراسة الي تقييم التعبير الهستوكيميائي عن الميوسين في اورام الاناث باستخدام صبغة الالشين الأزرق وحمض البريودك مع محلول الشيفز. أجريت دراسة مقطعية وصفية علي 60 عينة تتراوح أعمارهم بين (13-95) في معمل الأنسجة المريضة الخاص بالصندوق القومي للتأمين الصحي في مدينة كوستي ولاية النيل الأبيض .تم تضمين العينات وتقسيمها وصبغها وفحصها تحت المجهر وتم تحليل النتائج التي تم الحصول عليها احصائيا باستخدام برنامج الحزمة الإحصائية للعلوم الاجتماعية. أظهرت الدراسة ان النوع الأكثر شيوعا في الأورام كان الورم الليفي (38.3%) , جميعها أظهرت ميوسين حمضي ومتعادل , ثم التغيرات الليفية الكيسية (28.3%) ,وجميعها أظهرت ميوسين حمضي ومتعادل . بينما كانت الأورام الأخرى مثل الورم الورقي والتهاب الثدي المزمن وتمدد القنوات والورم الحليمي داخل القنوات وفرط التنسج القنوي تمثل كل منها (1.7%) وأظهرت جميعها ميوسين حمضي ومتعادل , عدا فرط التنسج غير الطبيعي (1.7%) أظهرت ميوسين متعادل فقط. فيما يتعلق بالأورام الخبيثة , كانت نسبة سرطان القنوات العدائية من الدرجة الثالثة (11.7%) ,حيث أظهرت (10%) منها ميوسين متعادل فقط, بينما أظهرت (1.7%) منها ميوسين حمضي ومتعادل. وبلغت نسبة سرطان القنوات العدائية من الدرجة الثانية (10%) , وجميعها أظهرت ميوسين متعادل فقط, بينما كان سرطان الفصيصات (1.7%) واطهر ميوسين حمضي ومتعادل. تشير هذه الدراسة الي ان التعبير عن الميوسين يمكن ان يكون له دور في تمييز الأورام الحميدة عن الأورام الخبيثة في الثدي .

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### List of Abbreviation

<b>Meaning</b>	<b>Abbreviation</b>
American Joint Committee on Cancer	AJCC
Ataxia-Telangiectasia Mutated	ATM
Breast Cancer Gene 1	BRAC1

Breast Cancer Gene 2	BRCA2
Cadherin 1	CDH1
Checkpoint Kinase 2	CHEK 2
Deoxyribonucleic Acid	DNA
Distil Water	D.W
Distyrene – Plasticizer – xylene	DPX
Estrogen Receptor	ER
Hematoxylin and Eosin	H&E
Human Epidermal Growth Factor Receptor2	HER2
Neurofibromin 1	NF1
Nuclear protein	Ki 67
Partner and Localizer of BRCA2	PALB 2
Periodic Acid- Schiff	PAS
Phosphate and Tensin Homolog	PTEN
Progesterone Receptor	PR
Serine Threonine Kinase 11	STK 11
Statistical Package for the Social Sciences	SPSS
Triple Negative Breast Cancer	TNBC
Tumor- Node – Metastasis	TNM
Tumor Protein p53	TP53