

**Sudan University of Science and Technology**

**College of Graduate Studies**

**Detection of Mucin and its Types and Intensity in non Mucinous  
Breast Carcinoma in Khartoum State**

الكشف عن الميوسين وانواعه وكثافته في سرطان الثدي غير الميوسيني في ولاية  
الخرطوم

**A thesis is submitted for partial fulfillment of the degree of M.Sc. in  
Histopathology and cytology**

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**2012**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ (1) خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ (2) اقْرَأْ وَرَبُّكَ  
الْأَكْرَمُ (3) الَّذِي عَلَّمَ بِالْقَلَمِ (4) عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ (5)

صدق الله العظيم

سورة العلق الآيات 1-5

***Dedication***

***To:***

***My family***

***Teachers***

***&***

***Colleagues***

## **Acknowledgement**

**My grateful than to Dr. Moneira Abdallah Mansour, for her close supervision.**

**My gratitude extends to my family for encouragement and support.**

**My gratitude extends to the staff of histopathology and cytology department.**

**My thank full for all who help me**

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## **Abstract**

This a retrospective comparative study conducted in Khartoum state during the period of March to July 2012, the study aimed to detect the presence of mucin and its types and intensity in non mucinous breast carcinoma compared to benign neoplasms using histochemical stain, combined PAS- alcian blue in different pH.

One hundred blocks previously diagnosed as non mucinous breast carcinoma and other 100 of benign neoplasms were taken from different hospitals in Khartoum state (Laboratory Administration histopathology department, Radioisotope Centre Khartoum, Suba University Hospital and Omderman Hospital). The sections were cut using rotary microtome, then stained and examined using light microscope.

Mucin was detected in both types of neoplasms, with an increased ratio of acidic types mainly the sulphated one, which constituted 65% in benign and 93% in malignant, carboxylated mucin was detected in 50% of benign and 72% in malignant while neutral mucin was detected in benign more than malignant which constituted 30% and 23% respectively.

According to the intensity of mucin all benign neoplasms showed few intensity of both neutral and acidic mucin, while all the degrees of intensity were seen in malignant neoplasms( few, moderate and heavy) for acidic mucin and only few intensity for neutral mucin.

The study conclude that growing neoplasms are characterized by an elevated content of mucins compared with their tissue of origin, there for the study recommend taking mucins more in consideration for the histological findings of tumors and as adjuvant tool.

## خلاصة البحث

اجريت هذه الدراسة المرجعية المقارنة في ولاية الخرطوم في الفترة من مارس وحتى يوليو 2012 تهدف الدراسة للكشف عن وجود الميوسين وأنواعه وكثافته في سرطان الثدي بالمقارنة مع أورام الثدي الحميدة باستخدام الأصباغ النسيجية محلول البيريودك اسد شيف والالسين الأزرق المزدوج في أوساط حمضية مختلفة.

تم اخذ مائة عينة من أورام الثدي الخبيثة , تم تشخيصها مسبقا ومائة عينة أخرى من أورام حميدة من مختلف معامل مستشفيات (مستشفى أم درمان, مستشفى الذرة, مستشفى سوبا الجامعي وقسم الأنسجة بإدارة [المعامل ولاية الخرطوم] . تم قطع العينات باستخدام جهاز الميكروتوم كما تم صبغها وفحصها باستخدام المجهر الضوئي.

وجد الميوسين في كلا النوعين من الأورام مع زيادة معدل النوع الحمضي خصوصا السلفيت حيث كان 65% في الحميد و93% في الخبيث , الميوسين الكاربوكسليتي وجد في 50% من الحميدة و72% من الخبيثة , بينما كان الميوسين المتعادل بنسبة اكبر في الحميدة عن الخبيثة بنسب 30% و 23% على التوالي .

اعتمادا على كثافة الميوسين كانت الأورام الحميدة بكثافة قليلة في نوعي الميوسين الحمضي والمتعادل , بينما وجدت كل درجات الكثافة (قليلة , وسط وعالية ) للميوسين الحمضي في الأنواع الخبيثة فقط كثافة قليلة للميوسين المتعادل .

خلصت الدراسة إلى إن الأورام النامية تتصف بزيادة نسبة الميوسين مقارنة مع نظيرتها في المنشأ , عليه توصى الدراسة بأخذ الميوسين في الاعتبار كأداة مساعدة في التشخيص .