

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

: قال تعالى

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صدق الله العظيم

(سورة الرحمن الايات من ١-٤)

Dedication

I dedicate this research...

To my Mother

To my Father

To my lovely sister

To the people whom I love, respect and appreciate

Acknowledgement

All praise and thanks to **Allah** the Almighty, who blessed me with the courage for preparation and completion of this study.

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Abstract

Members of the family *enterobacteriaceae*- producing ESBLs constitute a serious threat to current β - lactam therapy. Moreover, *in vitro* detection of ESBLs expression has proved to be difficult because many of these strains are reported susceptible to the widely used and broad-spectrum β -lactam antibiotics.

This study was carried out in Research Laboratory of Sudan University of Science and Technology during the period from December 2009 to May 2010, to detect TEM, SHV and CTX-M genes in ESBLs-producing *Proteus vulgaris*

Six strains of *Proteus vulgaris* were obtained from the Research Laboratory . The strains were cultured on nutrient agar and examined microscopically to check their purity. DNA extracted from each strain by boiling method. Multiplex PCR method was adopted to detect gene present in *Proteus vulgaris*. The results showed that only TEM gene existed in all tested strains. It is concluded the TEM is the common gene present in *Proteus vulgaris*. further studies with large number of samples are required to validate the present result .

المستخلص

أنواع عائله المعويات المنتجة لإنزيمات بيتا لاكتام واسعه الطيف تشكل خطورة عالية تجاه البيتا

لاكتام من المضادات الحيوية علاوه علي ذلك الكشف المعملّي لإنزيمات بيتا لاكتام أصبح من

الصعوبة بمكان لأن معظم هذه السلالات أثبتت حساسيتها لمدي واسع من المضادات الحيوية

المستعمله .

هذه الدراسة تُقَدِّمُ في مختبر البحوث في جامعة السودان للعلوم والتكنولوجيا في الفترة من ديسمبر/ 2009 إلى مايو/ 2010، للكشف عن الجينات (*TEM* و *SHV* و *CTX-M*) في المتقلبه الاعتياديه المنتجة لإنزيمات بيتا لاكتام واسعه الطيف.

تم الحصول علي ست سلالات من مختبر البحوث والتأكد من نقاوتها بإعادة تزييعها على الأجار المغذي ومن ثم فحصها مجهرياً. استخلص الحمض النووي منقوص الأكسجين للسلالات باستعمال طريقة الغليان. استخدمت طريقة تفاعل البلمرة المتسلسل المتعدد الإرسال للكشف عن هذه الجينات في السلالات الست. أظهرت النتائج وجود الجين *TEM* في السلالات الست وخلصت الدراسة إلى أن الجين *TEM* هو الأكثر شيوعاً في سلالات المتقلبه الاعتيادية ومطلوب دراسات اضافية يجب ان تنفذ في عدد كبير من العينات لإثبات هذه النتيجة.

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