

Streptococcus pneumoniae

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217

(ENT)

Streptococcus

pneumoniae

Streptococcus pneumoniae

Streptococcus pneumoniae

Streptococcus pneumoniae :

Genetic Study on Ampicillin Resistant *Streptococcus pneumoniae* Isolated from Suppurative Otitis Media

Jasim F. Ali

*Department of Biology
College of Science
University of Koya*

Amera M. Al-Rawi

*Department of Biology
College of Science
University of Mosul*

ABSTRACT

A total of 217 ear swabs were collected from patients infected with suppurative otitis media through their visit to ENT unit of Al-Zahrawi Hospital in Mosul city. Isolation and identification of microorganisms from all specimens were done, the role of *Streptococcus pneumoniae* as a causative agent of the disease is shown; finally we examined plasmid existence in *Streptococcus pneumoniae* and its role in ampicillin resistance. The results showed that this bacterium is one of the main causative agents of otitis media. Plasmids have been prepared from *Streptococcus pneumoniae* and calculated their quality; the results also showed that the gene responsible for this bacterium resistance to ampicillin is located on chromosomal DNA, and plasmids have no role in this resistance. Finally these genes were transferred from resistant strain to a sensitive one by transformation process.

Keywords: Otitis media, Resistance to ampicillin, *Streptococcus pneumoniae*.

(OM) Otitis media

Streptococcus pneumoniae

%2

Otitis media

.(Block, 1997)

%41

(Paradise,

Non genetic resistance

.1995)

Genetic resistance

.....*Streptococcus pneumoniae*

Chromosomal

Extra chromosomal resistance

resistance

R. plasmids

Plasmids

.(Jawetz *et al.*, 1991)

Genetic

Transformation

materials

Spontaneously

competent

.(Jawetz *et al.*, 1980; Davis *et al.*, 1980)

Streptococcus pneumoniae

Otitis media

Streptococcus pneumoniae

Transformation

Otitis media

217

(Koneman *et al.* Modified stuart transport medium

2.5 – 1.5

al., 1997)

:(Al-Faris *et al.*, 1998; Del Castillo, 1996)

:

Streptococcus pneumoniae

Streptococcus pneumoniae

.(Jawetz *et al.*, 1991; Mac Faddin, 1985)

Streptococcus pneumoniae

:

.(Barcak *et al.*, 1991) (Plasmid DNA)

3 10 *Streptococcus pneumoniae*

3 / 50

24 37

4 / 5000 (MSE High Speed 18) Refrigerated centrifuge

Phosphate buffer 200 10

.NaOH-SDS 400 saline(PBS)

3 300 10

15 4.8 Sodium acetate

/ 5000 (Gallenkamp)

510 () 850 . 15

15 4 (2-Propanol) -2

()

. %70

Aqueous phase

1 : 24 -

20-

. 15 / 5000

300 %70

(20) 2 Tris HCl EDTA(TE)

37 .Rnase

40*Streptococcus pneumoniae*

1 : 24

7.5 150

Ammonium acetate

20-

%70 ()

TE 100

(Birnboim and Doly, 1979)

.TE ³ 0.9 ³ 0.1

Ultraviolet

260

.Pye Unicam SP 600 spectrophotometer

260

³ 1 / 50 = 1

Streptococcus pneumoniae

:

Quick microscale (Chromosomal DNA)

: (Barcak *et al.*, 1994) preparation of chromosomal DNA

³ 1 *Streptococcus pneumoniae*

24 37 %5

10 4 / 5000

NaOH – SDS 40 NaCL, TE

10 65 – 50 Rnase (50) 5

-

1 : 24

. %70

TE

200

Streptococcus pneumoniae

(Transformation)

Streptococcus pneumoniae

Streptococcus pneumoniae

Streptococcus pneumoniae

³ / 50

: (Muckerman *et al.*, 1982)

:

Streptococcus

%5

0.2

pneumoniae

.Pye Unicam

SP 600

650

-

³ 19

³ 1

0.1

%0.2

0.2

%2

³ 1

30

2

³ 9

30

30

2.5

37

37

³ /

50

Streptococcus

24

pneumoniae

.....*Streptococcus pneumoniae*

:

:

Electrophoresis

.Streptococcus pneumoniae

Agarose gel

50

10

.(GAMAG 81510)

DBS

(

)

.(Jansie *et al.*, 1987)

² / 5

1.5

.(Micheal, 1982) Ethyidium bromide

280

(Short wave UV – 254 Nm, Mineralight lamp)

.(1989)

(1)

Staphylococcus aureus

Streptococcus pneumoniae

%.18.6

:1

%							
			%		%		
23.4	49	<i>S. aureus</i>	87.1	189	12.9	28	217
18.6	39	<i>Str. pneumoniae</i>					
0.9	2	<i>Str. pyogenes</i>					
4.3	9	<i>Diphtheroids</i>					
17.1	36	<i>H. influenzae</i>					
8.1	17	<i>P. mirabilis</i>					
7.1	15	<i>K. pneumoniae</i>					
6.8	13	<i>Ps. aeruginosa</i>					
4.7	10	<i>M. catarrhalis</i>					
4.3	9	<i>E. coli</i>					
3.3	7	<i>Candida albicans</i>					
1.4	3	<i>Asp. niger</i>					
100.0	209						

Streptococcus pneumoniae

84 (Chonmaitree *et al.*, 1986)

(Kontinen,) %20.0

.%18

1988

Streptococcus pneumoniae

Streptococcus pneumoniae

Streptococcus

%32.7

(Birboim and

(Barcak *et al.*, 1994)

pneumoniae

TE

10 : 1

Doly, 1979)

.....*Streptococcus pneumoniae*

()

: 0.0037 260

³ / 50 =1

$$X = 10 \times 0.0037$$

$$10 \times 0.0037 \times 50 = X \Leftarrow$$

$$^3 / 1.85 = X \therefore$$

Streptococcus pneumoniae

(LeBlanc and Hassell, 1976)

Streptococci

Streptococcus pneumoniae

(Dnag – Van *et al.*, 1978)

Centrifugation methods

Streptococcus

(Jacobs *et al.*, 1978)

pneumoniae

(Smith and Guild , 1979)

.Streptococcus pneumoniae

Streptococcus pneumoniae

Streptococcus pneumoniae

Streptococcus

pneumoniae

Streptococcus pneumoniae

Streptococcus

(Muckerman *et al.*, 1982)

pneumoniae

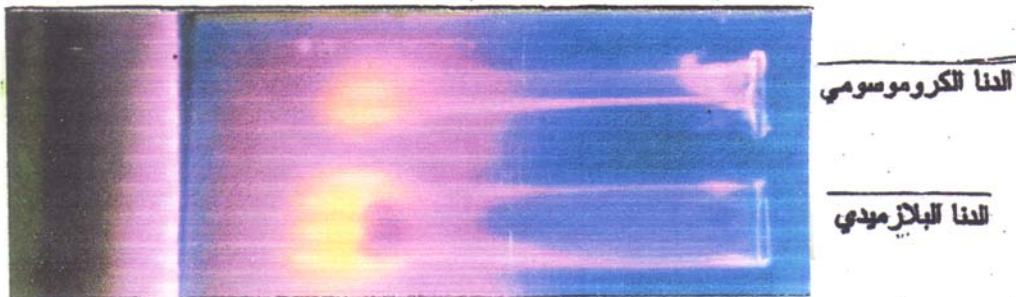
(Jawetz *et al.*, 1991)

(1)

Streptococcus pneumoniae

(1989)

Rnase



:1

Streptococcus pneumoniae

" (1989)

. 100 – 91

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