

Capparis spinosa

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ABSTRACT

This research was conducted to study the inhibitory activity of *Capparis spinosa* extracts against some pathogenic bacteria. Extracts prepared in different concentrations (200,400,500)mg/ml and agar diffusion method was used to studying this activity, also the synergism effects between plant extract and some antibiotic was studied.

Results indicates that Gram positive bacteria was resistant to plant extracts while Gram negative bacteria varied in their sensitivity depending on plant part and type of bacteria. The aqueous and alcoholic extracts of plant's fruit appear to be most affective. As the concentration of plant extracts increase the activity of inhibition increase as well. In some cases plant extract activity was more effective than studied antibiotics and also result showed synergism effect between plant extract and antibiotics and some studied bacteria lost their resistance to antibiotics by this synergism phenomenon.

Capparis spinosa

Capparis spinosa

³ / (500,400,200)

.(2,1)

Capparidaceae

(250)

Capparis

Capparis cantilaginea spinosa

.(5,4,3)

.(7,6)

Rutin

Rutic acid

Myrosinase

Glycosides

Pectic acid

Caproic acid

Stachydrine

Saponin

.(7) Lerpene

Flavonoides

.(8) ()

.(3)

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Classification and collection of the plant

Capparis spinosa

/ /

.(10,9)

-:

Kingdom	Plantae-plants	
Sub kingdom	Tracneobionta-vascular plants.	
Super division	spermatophyta-seed plants.	
Division	Magnoliophyta-flowering plants.	
Class	Magnolio psida-Dicotyledons	
Subclass	Dilleniidue	
Order	capparales	
Family	cappareae-caper family	
Genus	capparis L.-caper	
Species	<i>capparis spinosa</i> L.[Excluded-coper]	(11).

Capparis spinosa

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-: *

(13,12)

Staphylococcus aureus; Staphylococcus epidermidis, Enterococcus faecalis, Staphylococcus saprophytic, E.coli, Klebsiella pneumoniae, Proteus mirabilis, Pseudomonas aeruginosa, Salmonella typhi.

-:Antibiotic discs *

(14).(1)

(BIOANALYSE LID.TURKEY)

:(1)

Sensitive S	Intermediate I	Resistant R	التركيز مايكروغرام/قرص	المضاد الحيوي
≥ 23	18 – 22	≤ 17	100	Carbencillin (PY)
≥ 18	13 – 17	≤ 12	30	Chloramphenicol(C)
≥ 18	14 – 17	≤ 13	15	Erythromycin(E)
≥ 14	12 – 13	≤ 11	10	Ampicillin(AM)
≥ 15	12 – 14	≤ 11	10	Streptomycin (S)
≥ 19	15 – 18	≤ 14	30	Tetracycline (TE)
≥ 19	16 – 18	≤ 15	5	Cefixime (CFM)
≥ 18	14 – 17	≤ 13	30	Amoxycillin+clavulanic acid (AMC)
≥ 21	16 – 20	≤ 15	5	Ciprofloxacin (CIP)
≥ 15	13 – 14	≤ 12	10	Tobramycin (TOB)
≥ 18	15 – 17	≤ 14	30	Cephalexin (CL)
≥ 17	15 – 16	≤ 14	2	Clindomycin (DA)
≥ 18	14 – 17	≤ 13	25	Amoxicillin (AX)
≥ 15	13 – 14	≤ 12	15	Gentamicin (CN)
≥ 18	14 – 17	≤ 13		Cefotaxime(CTX)
≥ 11	9 – 10	≤ 8	30	Polymxin B (PB)
≥ 16	11 – 15	≤ 10	5	Trimethoprim (TMP)

≥ 16	13-15	≤ 12	3.	Doxycycline (DO)
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4:1 40 (15)

160

Blender :

(60)

(24)

15 / 2000

Edwards Lyophilizer

(5),(2.5),(2)

/ (500 400 200)

0.45

*

()

250 50 (17,16)

%95

Electrothermal (Rotary Vaccune vaporation)

° 40

(5),(2.5),(2)

/ (500,400,200)

(18) 15 62

Dimethyl Sulfoxide (DMSO)

Capparis spinosa

(750) (50) (19) *

(2)

(1)

(0.22) (Ethylene glycol) (9)

*

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1966 Bauer

/ 10^8

0.1

30 °37 (OXoid Muller – Hinton agar)

(WhatmanNo-1-)

/ (500,400,200) 6

24 °37

*

(Pyun and Shin, / (500)

(21) 2006)

Ciprofloxacin (5µg) Ampicillin(AM) (10gµ) Streptomycin (S) (10gµ)

Cefotaxime(CTX) (30gµ) Cephalexin (CL) (30gµ) (CIP)

/ 10^8

0.1

30 °37

/ (500) (Oxoid)

(14-16) ° (37)

(2)

³ / (200)

(22)

(23) .

(3)

Carbencillin

Gentamicin Amoxicillin Clindamycin Tobromycin Erythromycin
Doxycyclin

Pseudomonas E.coli Proteus mirabilis,

Kle. Pneumonia S. typhi (10) *aeruginosa*

Capparis spinosa

Erythromycin Carbencillin
(8) Doxycyclin Gentamicin Stryptomycin Ampicillin

Pseudomonas aeruginosa

(14) Ciprofloxacin

Cefixime *Kle. Pneumoniae*

S.typhi 12 Cephalexin

Doxycyclin 12 Chloramphenicol

Cephalexin Clindamycin Gentamicin Amoxacillin

() : (2)

/ 200

خليط الزيت	خليط كحولي	خليط مائي	جذر كحولي	جذر مائي	أوراق كحولي	أوراق مائي	ثمرة كحولي	ثمرة مائي	نوع المستخلص / نوع البكتريا
									البكتريا السالبة لصبغة كرام
6	6	10	6	6	6	6	8	10	<i>E.coli</i>
6	10	6	6	6	6	6	12	8	<i>Salmonella typhi</i>
11	10	6	6	6	8	6	8	10	<i>Proteus mirabilis</i>
8	9	10	6	8	6	6	14	10	<i>Pseudomonas aeruginosa</i>
6	11	8	6	6	6	6	12	8	<i>Klebsiella pneumoniae</i>
-Ve									البكتريا الموجبة لصبغة كرام
									<i>Enterococcus faecalis</i>
									<i>Staphylococcus aureus</i>
									<i>Staphylococcus saprophytic</i>
									<i>Staphylococcus epidermidis</i>

&

&

:(3)

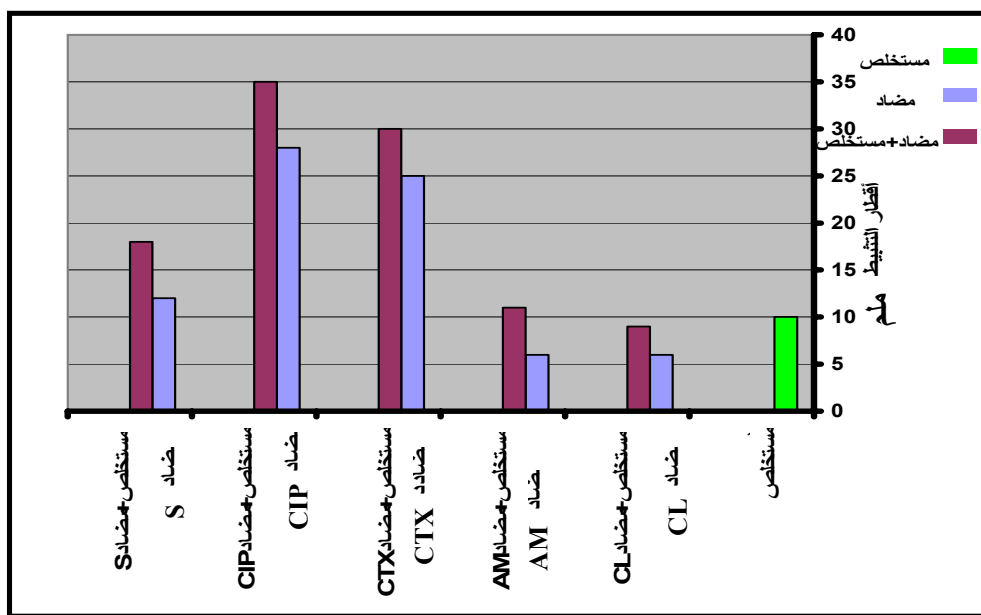
Cefotaxime(CTX)	Trimethoprim (TMP)	Doxycycline (DO)	Polymxin B (PB)	Gentamicin (CN)	Amoxicillin (AX)	Clindamycin(DA)	Cephalexin(CL)	Tobramycin (TOB)	Ciprofloxacin(CIP)	Amoxycillin+clavulani acid(AMC)	Cefixime (CFM)	Tetracycline(TE)	Streptomycin (S)	Ampicillin (AM)	Erythromycin (E)	Chloramphenicol(C)	Carbencillin (PY)	المضادات البكتريا
٢٥	١٨	٦	١٨	٦	٦	٦	٦	٦	٢٧	١٧	١٢	١٨	١٢	٦	٦	١٨	٦	<i>E.coli</i>
٢٠	٦	٦	١٨	٦	٦	٦	١٠	٦	٢٠	٦	٦	١٧	١٢	٦	٦	١٢	٦	<i>Salmonella typhi</i>
٦	١٥	١٧	١٨	٦	٦	٦	٦	٦	٦	١٨	٦	١٨	٦	٦	٦	١٠	٦	<i>Proteus mirabilis</i>
١٤	٦	٦	٢٠	٦	٦	٦	١٠	٢٠	١٦	٦	٦	٦	٦	٦	٦	٦	١٠	<i>Pseudomonas aeruginosa</i>
١٧	١٥	٦	١٨	٦	٦	٦	٦	٦	٢٥	١٨	١٢	٦	٦	٦	٦	١٤	٦	<i>Klebsiella pneumoniae</i>

Capparis spinosa

(4)
/ (500 400)
Salmonella *Proteus mirabilis*
(10 12 13) *Kl. Pneumoniae typhi*
Rutin
Rutic acid Myrosinase Glycosides
Pectic acid Caproic acid
Flavonoides Saponin
(8)

() :(4)

500	400	200	تراكيز المستخلص المائي ملغم/سم	نوع البكتريا
10	10	10		<i>E.coli</i>
12	10	8		<i>Salmonella typhi</i>
13	10	10		<i>Proteus mirabilis</i>
11	10	10		<i>Pseudomonas aeruginosa</i>
10	10	8		<i>Klebsiella pneumoniae</i>



E.coli

:(1)

E.coli (1)

S, CIP, CTX

(18, 35, 30)

AM

(10,11)

Proteus mirabilis

(2)

S,CIP,CTX,AM,CL

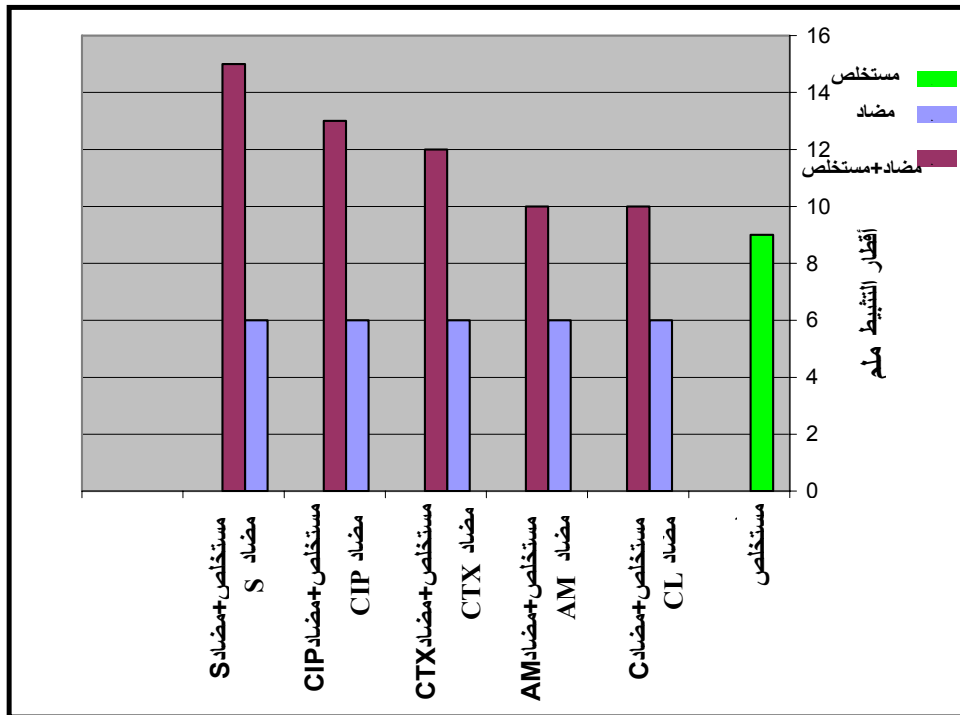
(12) AM,CL

(10)

S

(15) CIP

(13) CTX



Proteus mirabilis

:(2)

Capparis spinosa

Kl.pneumoniae

(3) (17, 10, 13) ,S,AM,CL
 (35,20) CIP,CTX (25,17)

Pseudomonas aeurginosa

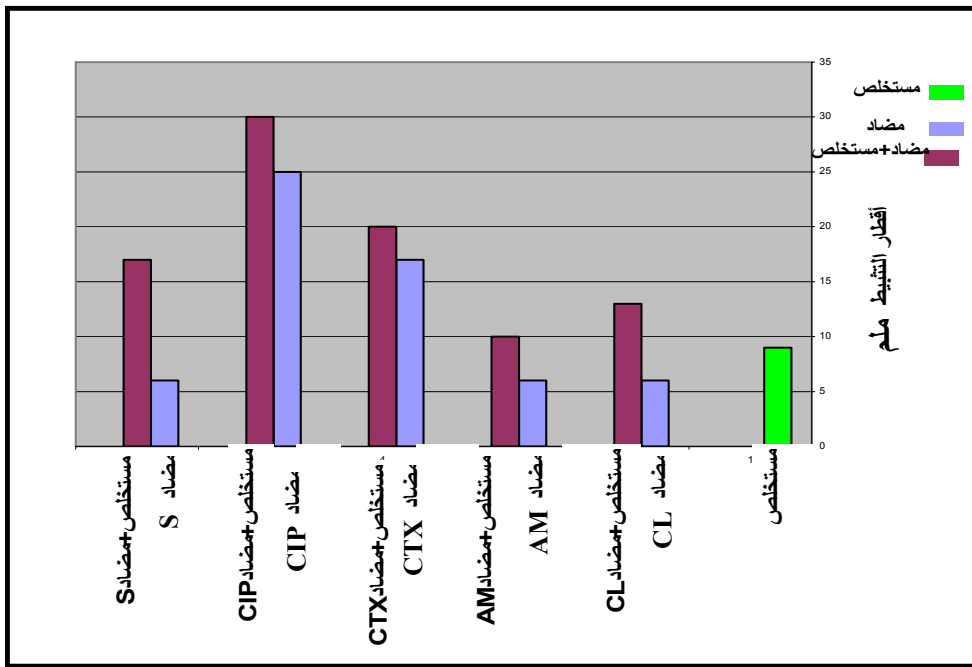
S,CIP,CTX,AM,CL,

(4) (10,30)

Salmonella typhi

(5)

(10,38)



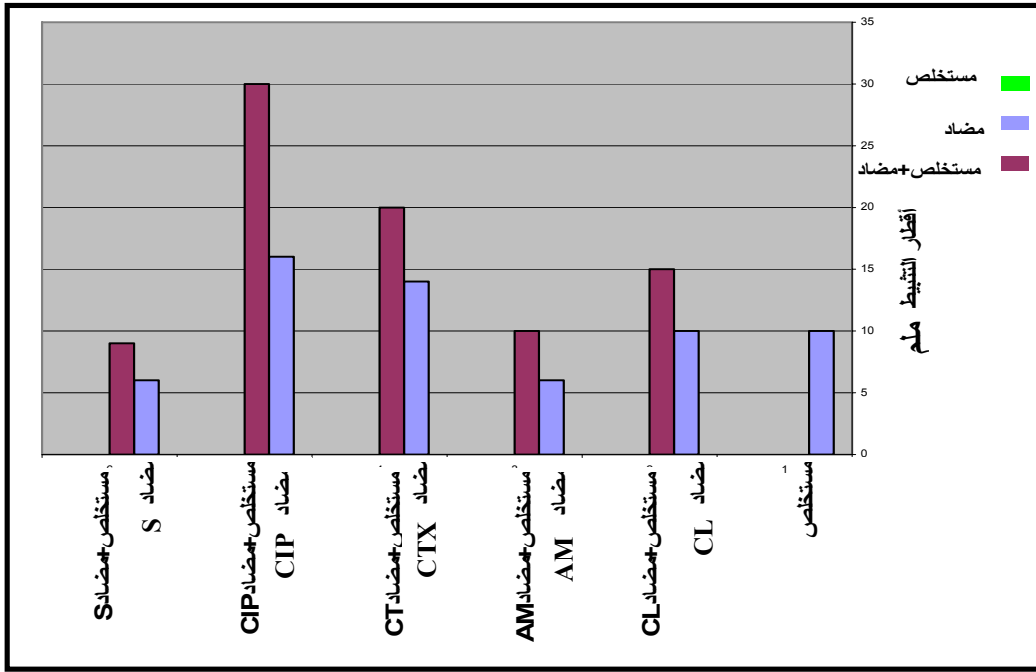
(3):

Klebsiella pneumoniae

(8).

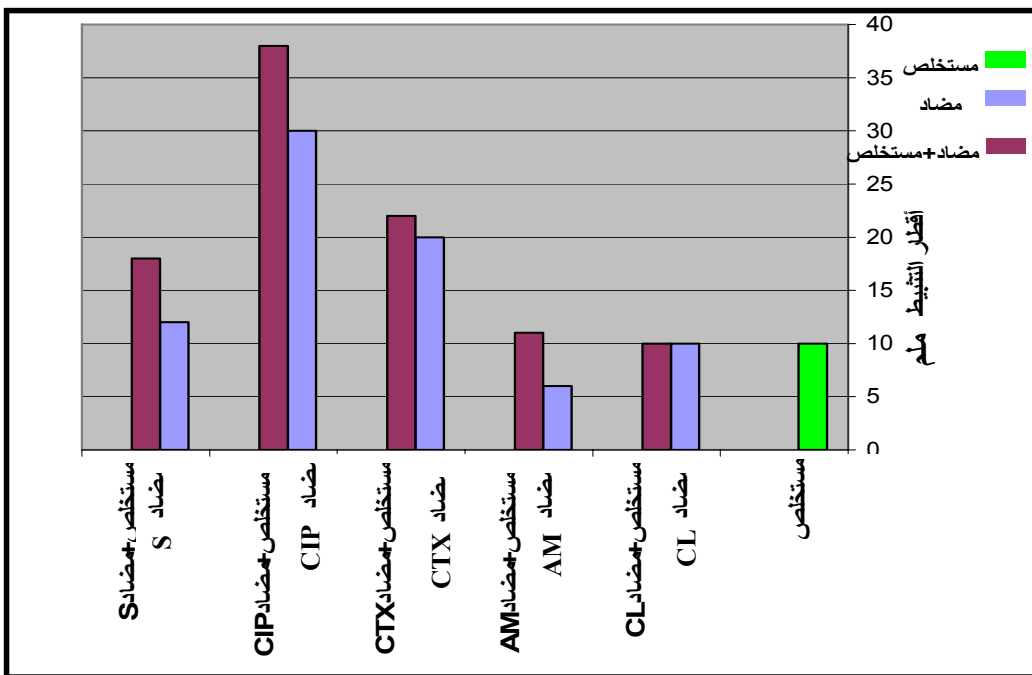
(24).

(In Vivo)



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Pseudomonas aeruginosa



(5) :

Salmonella typhi

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