

(2002/9/15 2002/7/31)

(%100) (%88.88) (%88.23)

Effect The Mixture of Savlon on Bacterial Resistance of Antibiotics

Hanan S. Noore

*Department of Basic Medical Science
College of Nursing
Mosul University*

Adeeba Y. Shareef

*Department of Biology
College of Science
Mosul University*

ABSTRACT

The mixture of Savlon with seven chemical disinfectants (Hibitane, Formalin, Septicin, Savlon, Dettol , Iodine and Biotic) was tested. it appeared that Hibitane had the highest effect at (88.23, 88.88 and 100%) concentrations on Gram negative bacilli, Gram positive cocci and Gram positive bacilli. The effect of disinfectant on bacterial resistance of antibiotic, so bacteria treated with Sub-Minimum Inhibitory Concentrations of savlon mixed with other disinfectants which lead to an increase of resistance of some and the sensitivity of others.

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.(Baker et al., 1980)

(1998)

Brooks

(2 .Synergism (1:

.Additive.

(4. Antagonisms

(3. Indifferent

(Laurence et al., 1997)

.(Hugo, 1987)

Burmfit

(Rutala et al., 1997)

(MSSA , MRSA)

(MSSA)

(MRSA) (1985)

(MRSA)

(1988)

Al-Masaudi

S. aureus

(1984)

Towensend

Serratia marcescens

. (Kaulfers & Laufs, 1985; Ahonkhai & Russell, 1979)

(1997)

Sagripanti

Staph. pseud. aeruginosa

Staph epidermidis Salmonella typhimurium Clost. perfringes

aureus

E. coli

(Sub-MICs) Sub-Minimum Inhibitory Concentration

Klebsiella E. coli

(%90)

(Al-

Staph. aureus

. Jebouri, 1989; Talib & Khurana, 1988; Jawets et al., 1970)

.(1)

:1

	%			
(Zeneca)	5	Chlorhexidine	Hibitane	1
(Merkez)	15:1.5 or 3:0.3	: Chlorhexidine : Cetrimide	Savlon	2
PR AdamLtd.Arpel	15	Cetyl Trimethyl Ammonium Chloride	Biotick	3
/	10	Benzalkonium Chloride	Septicin	4
BDH	40	Formaldehyde	Formaldehyde	5
	5	Chloroxylenol	Dettol	6
/ (Denteck)	5	Chloroxylenol	Septol	
Purna-Phrmaceuticals ()	10	Povidine-Iodine	Iodine-Solution	7

.(Stock Solutions)

% 5

...

:

(a)

(5-4)

(10)

(18) °(37)

(10⁶ - 10⁵)

.3 /

(b)

(%5)

Dettol Hibitane

3 (49) (%5) : 3 (1) (%5)

(25 : 1) (50 : 1) 3 (24)

:

100 : 1 50 : 1 25 : 1) Stock Solution

(51200 : 1 25600 : 1 12800 : 1 6400 : 1 3200 : 1 1600 : 1 800 : 1 400 : 1 200 : 1

:

(c)

(50)

(50)

.3 / (512 ... 8 4 2 1)

(MICs) (24) °(37)

(a)

.3 / (10⁶-10⁵) (3) °(37)

(b)

2 1) (1) Stock Solutions

.3 / (2000 1500 1024 512 256 128 64 32 16 8 4

.3 / (2000 - 1)

: (c)

(50)

(50)

(24) °(37)

) (Sub-MIC)

() (Sub-MIC)

(3) °(37)

(Stock Solution)

Disk diffusion

.(Vandepitte et al., 1991)

(Bauer et al., 1966)

(2) (:)

Proteus mirabilis ³ / (2)

Pseud. aeruginosa ³ / (256) *Providenciae rettgeri*

(256) *Pr. mirabilis* *K. rhinoscleromatis* ³ / (16)

C. frundii *S. liquefaciens* *E. cloacae* ³ /

³ / (1024) *A. faecalis* ³ / (16)

(32) *M. morgani* *S. liquefaciens*

K. oxytoca ³ / (1024) *Pr. vulgaris* ³ /

³ / (1024) *E. aerogenes* ³ / (64)

Pseud. aeruginosa ³ / (64) *P. vulgaris*

³ / (1500) *S. liquefaciens*

			(3)		
<i>Staph. aureus</i>	³ /	(16)	<i>Staph. swarneri</i>	³ /	(1)
<i>Strep. agalactiae, Strep. faecalis</i>	³ /	(64)			
	³ /	(1024)	<i>Strep. agalactiae, Strep. faecalis</i>	<i>Staph. epidermidis</i>	
<i>Staph. swarneri</i>	³ /	(4)		<i>Staph. haemolyticus</i>	
			<i>Staph. hominis</i>	³ /	(256)
<i>Staph</i>	³ /	(1500)	<i>Strep. faecalis</i>	³ /	(64)
	³ /	(256)		<i>haemolyticus</i>	
<i>Staph. Staph. hominis</i>			³ /	(1500)	<i>Strep. faecalis</i>
					<i>.Strep. Agalactiae saprophyticus</i>
			(4)		
<i>B.</i>	³ /	(512)	<i>B. coagulans</i>	³ /	(64)
³ /	(256)	<i>B. coagulans</i>	³ /	(64)	<i>cereus</i>
<i>B.</i>	³ /	(32)			<i>B. cereus</i>
		<i>B. subtilis</i>	³ /	(256)	<i>B. cereus coagulans</i>
(32)	<i>B. coagulans</i>	<i>B. subtilis</i>	³ /	(16)	
(512)				<i>B. cereus</i>	³ /
<i>B. B. subtilis</i>	³ /	(1024)	<i>B. cereus</i>	³ /	
³ /	(1500)	<i>B. coagulans</i>	³ /	(512)	<i>coagulans</i>
			(4)	<i>B. cereus</i>	

...

() (4 3 2)

(512) *Staph. swarneri* ³ / (1) (+)
B. cereus ³ /

:

() :

(%70.58) (76.47) (%88.23)

(2) (%41.17) (%52.94) (%82.35)

(%22.22) (%44.44) (%44.44) (%33.33) (%66.66) (%88.88)

(%33.33) (%66.66) (%100) (3)

.(4) (%33.33) (%33.33) (%66.66)

(3 : 0.3)

(5)

(1990)

(permeases)

AL-Jebouri and

Savaji et al(1986) Yehia(1988)

(1989) Jebouri

Staph. (1999) Russell

aureus

Kampt

(1999)

(S-MIC_s)

:5

Pseudo. Aeruginosa

N	CRO	PRL	TOB	DA	CAR	TE	AMP	

Strept. faecalis

AMX	M	L	CRO	E	OB	
-						

Staph. aureus

E	GM	M	V	AMP	P	

Bacillus subtilis

W	TE	TOB	CTX	B	P	

∴ ∴ ∴
∴ - ∴ ∴

.1990

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- (MIC_s) :4

MIC _s		MIC _s		MIC _s		MIC _s		MIC _s		MIC _s		()		
												S- MIC _s	MIC _s	
1024	1500	1024	2000	16	64	256	512	128	512	128	512	2	4	
1500	2000	512	1024	32	128	32	256	256	1024	512	2000	8	16	
512	2000	1024	1500	16	32	32	64	64	128	64	256	4	8	B.
(%33.33)	1	(%33.33)	1	(%66.66)	2	(%33.33)	1	(%66.66)	2	(%100)	3	—		
(%66.66)	2	(%66.66)	2	(%33.33)	1	(%66.66)	2	(%33.33)	1			—		

—

(MIC_s)

:3

	MIC _s		MIC _s		MIC _s		MIC _s		MIC _s		()		
											S-MIC _s	MIC _s	
500	512	1500	32	128	128	512	32	128	16	64	1	2	S. aureu
500	1500	2000	64	256	1024	1500	16	128	8	32	4	8	S. haemolyticu
000	1024	1500	256	512	128	256	16	64	8	32	4	8	S. homini
500	512	1024	8	32	64	128	256	1024	4	16	4	8	S. epidermidi
000	512	1500	1024	1500	512	1024	16	64	2	8	32	64	S. saprophyticu
500	256	1500	16	128	512	1024	16	32	2	8	2	4	S. simulan
024	256	512	4	8	512	1024	8	16	1	4	1	2	S. swarner
500	64	256	32	64	64	512	4	16	2	8	1	2	Str. faecali
000	256	512	64	128	64	256	4	8	8	16	4	8	Str. agalactia
2	(% 44.44)	4	(% 44.44)	4	(%33.33)	3	(% 66.66)	6	(% 88.88)	8	—		%
7	(% 55.55)	5	(% 55.55)	5	(% 66.66)	6	(% 33.33)	3	(% 11.11)	1	—		%

(MIC_s) :2

MIC _s		MIC _s		MIC _s		MIC _s		MIC _s		MIC _s		()		
												S- MIC _s	MIC _s	
024	1500	512	1024	256	1024	256	1500	128	512	16	32	4	8	K.
12	2000	256	1024	512	1500	256	1024	32	512	32	128	32	64	K. ozaer
56	2000	512	1500	1024	1500	512	1500	64	1024	128	512	16	32	K. oxyto
12	2000	128	1500	256	1500	128	1500	16	512	32	256	32	64	K. rhino
024	1500	64	1024	128	1024	64	512	128	512	64	128	8	16	E. aerog
500	2000	512	2000	64	1024	512	1024	256	512	128	256	4	8	E. cloaca
28	2000	128	1500	512	1024	128	1500	64	1024	256	1024	8	16	P. aerugi
54	2000	64	1500	128	1500	64	1500	128	1500	8	32	32	64	P. pseud
12	2000	128	1500	256	1500	32	1024	64	512	32	256	4	8	E. coli
56	2000	256	1500	64	512	1024	1500	256	512	64	256	32	64	S. liquef
500	2000	512	1024	128	512	16	128	32	1024	16	64	2	4	A. faeca
500	2000	1024	1500	32	256	256	512	64	1024	4	16	4	8	P. vulgar
500	2000	256	512	128	512	512	1024	16	128	2	8	2	4	P. mirab
500	2000	512	1024	512	1024	256	512	256	1024	8	32	8	16	C. ferun
500	2000	1024	1500	128	256	512	1024	32	64	128	512	1	2	H. alvei
500	2000	512	1024	256	1024	256	512	64	128	2	16	8	16	P. rettge
500	2000	512	1024	128	1024	1024	1500	32	256	8	128	8	16	M. morg
41.17)	7	(%52.94)	9	(%82.35)	14	(%70.58)	12	(%76.47)	13	(%88.23)	15	—	—	%
58.82)	10	(%47.05)	8	(% 17.64)	3	(%29.41)	5	(%23.52)	4	(%11.76)	2	—	—	%