

(Iraqi propolis)

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Agar-well)

(diffusion method

Bacillus subtilis *Pseudomonas aeruginosa* *Escherichia coli*

16.7 15.3 9.8 8.1 *Staphylococcus aureus*

4.8 3.4 2.7 2.1

MIC

(Agar Dilution Method)

(MIC)

B. subtilis *Staph. aureus*

/ 4

/ 32 16 (MIC)

E. coli *Ps. aeruginosa*

Bacillus *Staphylococcus aureus* *Escherichia coli* :

Pseudomonas aeruginosa *subtilis*

. 2010 / 6 / 3

. 2010 / 7 / 11

(Propolis)

(2000 Bankova)

. (2008 Valafar Eshraghi ; 2005 Bankova)

. (2005 Kosalic)

(2005) Savickas

Alencar

(2007)

. (2001 Ota ; 2000 Sforcin ; 1999 Hayashi)

/

72

:

1

50

24

:

/ 10:1 %80

48

41

Staphylococcus aureus *Escherichia coli* :
- *Pseudomonas aeruginosa* *Bacillus subtilis*

Koneman

. (2000) MacFaddin (1997)

0.5 : ()

Baron) %1 9.5 %1.175

. (1994 Fingold

150 5 :

18

450

(1995 Atlas) / $10^8 \times 1.5$

:

(1990) Crespo (Agar-well Diffusion Method)

(Sterile swab)

6

/ 1, 10, 20, 30, 40, 50

(Control) 0.1

%80

24 °37

. ()

(Agar Dilution Method) : MIC

-NCCLS- National Committee for Clinical Laboratory Standards

- (2000)

2 1 °50 (Mueller-Hinton agar)

/ 64 32 16 8 4

(-)

(-) (+)

:

(Agar-well Diffusion Method)

Escherichia coli

Bacillus subtilis

Pseudomonas aeruginosa

Staphylococcus aureus

(1986 Pelazar)

. (1997 Miladi Musaiges)

(1)

Bacillus subtilis

Pseudomonas aeruginosa

Escherichia coli

16.7 15.3 9.8 8.1

Staphylococcus aureus

4.8 3.4 2.7 2.1

2.7 2.1 *Ps. aeruginosa* *E. coli*

9.8 8.1

3.4 *Staph. aureus* *B. subtilis*

16.7 15.3

4.8

(2005) Kosalic (2002) Koo

(2006) Mercan Katircioglu (2005)

Boyanova

Yaghoubi

(2007)

(MIC)

. 2

/																		
32			16			8			4			2			1			
-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	<i>E. coli</i>
-	-	-	-	-	-	-	+	+	+	-	+	+	+	+	+	+	+	<i>Ps. aeruginosa</i>
-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	+	<i>B. subtilis</i>
-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	<i>Staph. aureus</i>

(+) وجود نمو
(-) عدم وجود نمو

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ANTIBACTERIAL EFFECT OF IRAQI PROPOLIS .

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ABSTRACT

The objective of this study was to investigate the antibacterial activity of Iraqi propolis on some Gram positive and Gram negative bacteria .

The results of agar – well diffusion method showed that the Iraqi propolis exhibited antibacterial effects against Gram-positive bacteria much greater than that against Gram-negative bacteria, the mean diameters of bacterial growth inhibited by different concentrations of water extract of Iraqi propolis are 2.1, 2.7, 3.4 and 4.8 mm for *Escherichia coli*, *Pseudomonas aeruginosa*, *Bacillus subtilis* and *Staphylococcus aureus* respectively, while the mean diameters of bacterial growth inhibited by different concentrations of ethanolic extract of Iraqi propolis are 8.1, 9.8, 15.3 and 16.7mm respectively.

The Agar Dilution Method results showed that MIC of ethanolic extract of Iraqi propolis for *Staphylococcus aureus* and *Bacillus subtilis* was 4 mg/ml and MIC for *Ps. aeruginosa* , *E. coli* was 16 and 32 mg / ml respectively.

Key words: Iraqi propolis , inhibition , *Staphylococcus aureus* ◊ *Bacillus subtilis*,
Escherichia coli , *Pseudomonas aeruginosa*.