

)

(

- -

()

Fusarium oxysporum

Cryptococcus neoformans

Candida albicans

(PN)

(PN)

(N)

Controlled Release Study and Anti – fungal activity of Delivery poly (vinyl alcohol) Nystatin

Eman A. J. Al – Timimi

Abstract:

Poly (vinyl alcohol) hydrogel was prepared and loaded with Nystatin using gluteraldehyde as crosslinking agent.

The controlled release of matrix and their anti-fungal activity against *Candida albicas* , *Cryptococcus neoformans* and *Fusarium oxysporum* have been studied . The result showed that the release of Nystatin (PN) from the polymeric matrix relativity independent on the pH value. Also Nystatin (PN) increases the antifungal activity to higher extent from Nystatin (N) alone.

(Controlled Drug Delivery System)

(over ⁽¹⁾

(under dosing)

. dosing)

. (desired range)

(2)

...

(crosslinked polymers)

(Hydrogels)

(3)

(modification)

(5)

(4)

IPN

(6)

(7)

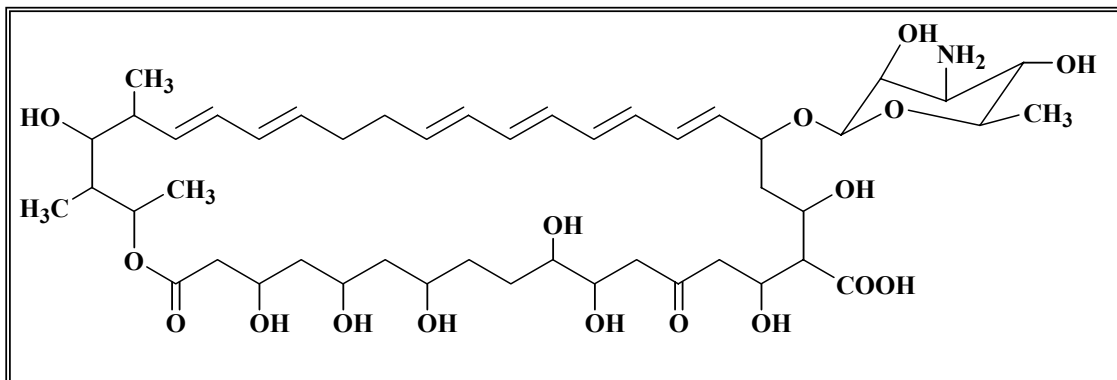
(8)

(polyene)

Nystatin

(9)

(10)



: (1)

: _____

()

:

(%1) (poly vinyl alcohol) () (%10)

(70-60) ()

(1) (gluteraldehyde) (2) .

(70-60)

. .

. .

: **Simulated gastric fluid (SGF)** ()

(8) . (2)

. ⁽¹¹⁾ (1)

: **Simulated intestinal fluid (SIF)** ()

(mono basic potassium phosphate) (6.8)

(400) (0.2) (190) . (250)

. ⁽¹¹⁾ (1)

:

()

-

(0.0327) (0.5)

(37) (50)

.

(5-0)

-

(290) Helios & V4.60 UV.-Visible spectrophotometer , England

: ()

Candida

. Fusarium oxysporum Cryptococcus neoformans albicans

: ()

-

. Sabourauds Glucose Agar (SGA)

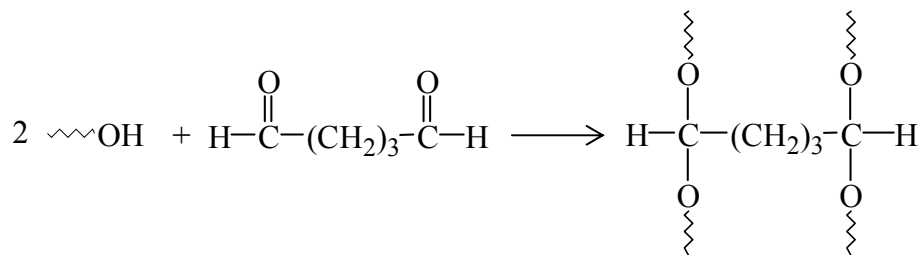
(1000) (Fluka) (20) (Fluka) (10) (Reachim) (20)

.

: ()

Bauer ⁽¹⁰⁾	Inhibition Diameter		
	<i>F. oxysporum</i>	<i>Cr. neoformans</i>	<i>C. albicans</i>
(25)	(SGA)	(7-5)	(5-3)
			(5)
	haemocytometer		/ 10 ⁶
L-	spreading		(0.2)
	(0.7)	(9) cork porer	shape
(10)	(25)		(1)
			(10-3)
(0.3)			
			()
		(ANOVA test)	
			RLSD

			()
()			
	gluteraldehyde		poly (vinyl alcohol)
()			



()

()
hydrophobic interaction

()

(matrix system) ()

:

(5-0)

(PN)

(PN) (2)

-0) (SIF) (SGF)

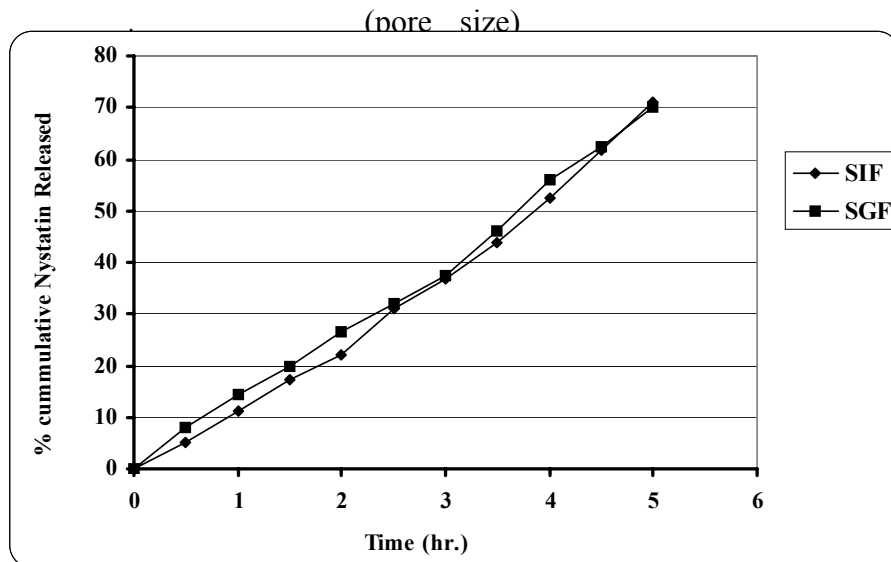
(%61.1) (SGF) (%61.8) (3)

(5) (4.5) (SIF)

(SIF) (%70.6) (SGF) (%70.1)

()

(4)



شكل (2) : تأثير الدالة الحامضية على نسبة الدواء المتحرر النستاتين عند (37) منوي

...

: Anti-Fungal Activity (PN) (N) ()

(PN)

(N)

(P<0.01)

(1)

(PN)

(PN)

(P<0.01)

F.

Cr. neoformans

C. albicans

oxysporum

(P<0.01)

(N)

Cr. neoformans

(P<0.01)

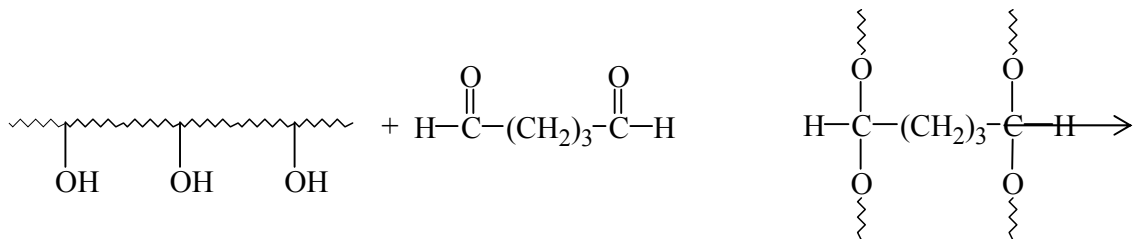
(12)

(%29)

()

(PN)

(10)



(PN)

(N)

(cm)

: (1)

عدد الأيام	<i>c. albicans</i>						<i>cr. neoformans</i>						<i>f. oxysporum</i>					
	3	4	5	6	7	10	3	4	5	6	7	10	3	4	5	6	7	10
المركب N*	4.0	3.9	3.6	3.4	3.3	3.0	4.6	4.6	4.4	4.2	4.2	4.2	2.5	2.4	2.3	2.3	2.3	2.3
PN**	7.0	6.8	6.6	6.5	6.5	6.5	5.2	5.2	5.1	5.0	5.0	5.0	9.0	9.0	9.0	9.0	9.0	9.0

(P<0.01)

** *

C: candida , Cr: cryptococcus , F: fusarium

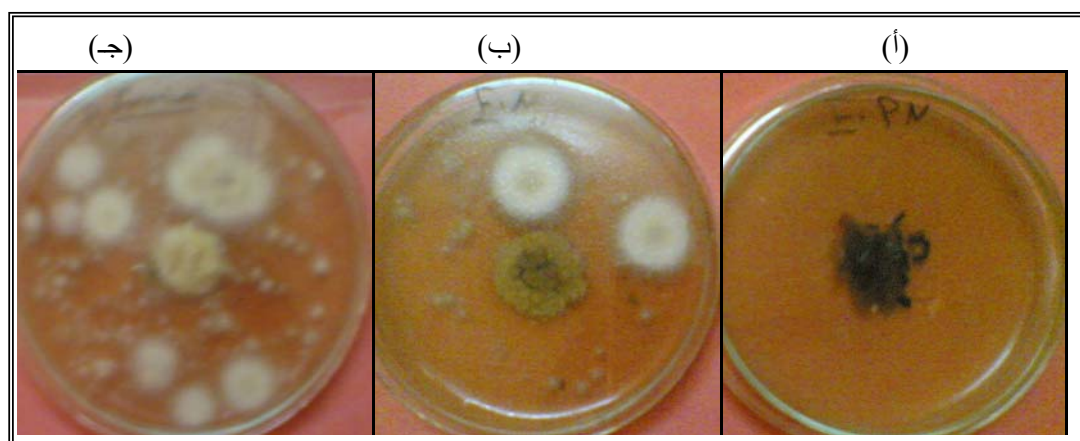
()

(P)

(PN)

(N)

(3,4,5)



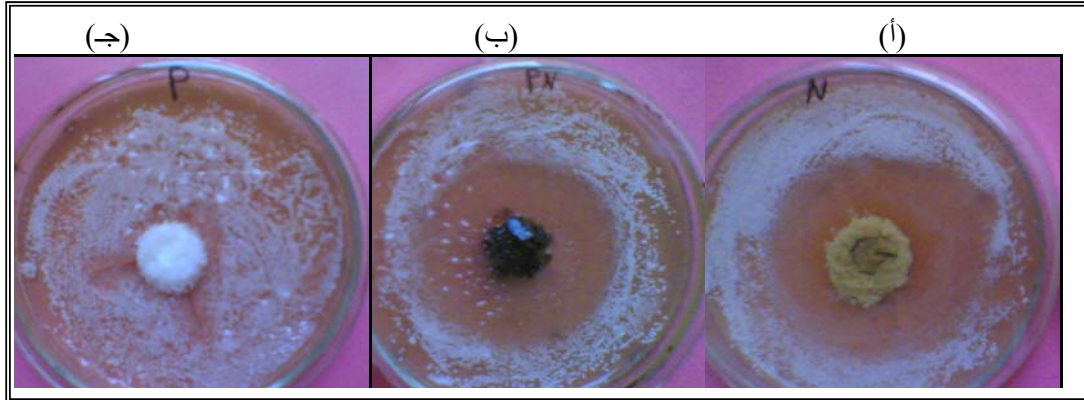
()

()

()

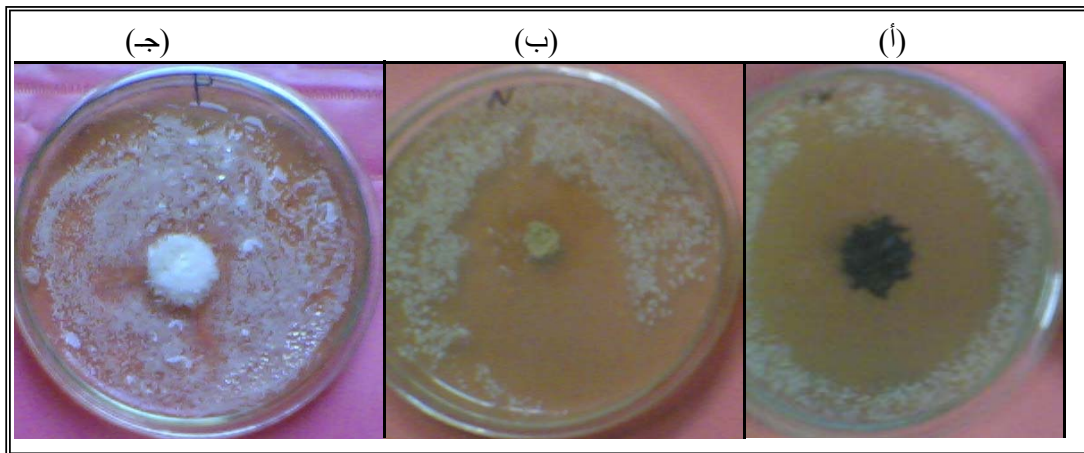
: (3)

Fusarium Oxysporum



() () () : (4)

cryptococcus neoformans



() () () : (5)

candida albicans

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