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PVA poly (vinyl alcohol)
Cryptococcus neoformans *Candida albicans*
Fusarium oxysporum
,
,
.
37°C
, 290 293
.

**Preparation and study of controlled release , Biological
activity of polymer griseofulvin delivery matrix
against some fungal isolates**

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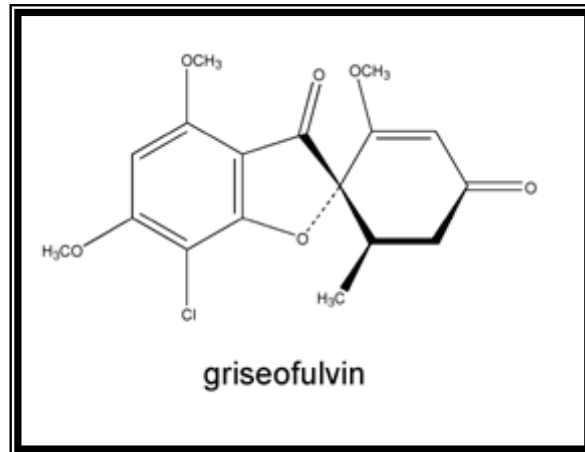
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Abstract

In this study the activity of poly (vinyl alcohol) hydrogel was loaded with antifungal griseofulvin against three types of fungal isolates including *Candida*

albicans, *Cryptococcus neoformans*, and *Fusarium oxysporum* in comparison with activity of griseofulvin alone in different periods. Polymer griseofulvin delivery was more effective with high significant difference than griseofulvin alone. While the activity of polymer alone was studied against same isolates we showed that it has no activity against all isolates. The release rate of griseofulvin from polymeric matrix was studied by using spectrophotometric U.V. technique at constant temperature 37°C and wave length 293 and 290 nm of each simulated gastric fluid (SGF) and in simulated intestinal fluid (SIF). In addition to the swelling ratio of the polymer griseofulvin delivery system was determined.

eukaryotic
20-30 .
,
opportunistic infections
Klepser 2003, Bardon-Pallier) predisposing factors
. (2005, Augustine 2004 ,Kamai 2003,
,
fungal cell specific targets
.
, Metetiadis 2003 , Klepser 2003, Bordon-Pallier)
. (2006,Jamieson 2005
Penicillium griseofulvum 1939
mitosis
anaphase
locally orally
Bossch)
(2006,Jamieson 2003, Sharma Garg 1997,



(1)

drug

delivery systems

. (1999,Stevens) polymerization

monomer

,

.

1998,)

. (2003, Sharma Garg 1999,

(PVA) poly (vinyl alcohol)

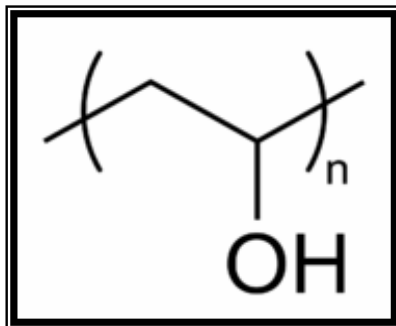
biocompatibility

, bioadhesive

PVA

swelling ratio

. (1997 , Mongia Peppas)



poly(vinyl alcohol) PVA

: (2)

(60-70)° C

60

40 ml

PVA

2 ml

100 ml

PVA

10 g

0.5 g

(60-70)°C

1 ml

(60-70)°C

Simulated gastric fluid (SGF)		- 2
8 ml		2 g
(1999 , European pharmacopoeia) 1000 ml		

Simulated intestinal fluid (SIF)			-3
250 ml	monobasicpotasium phosphate	6.8 g	
400 ml	0.2 N	190 ml	,
. (1999 , European pharmacopoeia)			1000 ml

8 mm, 0.5 g

50 (ph = 1.2) 50 ml
 . 37° C (ph = 8.2) ml
 , , ,)
 u.v. - - (
 Helios and v 4.60 uv-visible visible spectrophotometer
 290 nm 293 nm spectrophotometer England
 ,
 .

Cryptococcus *Candida albicans*

Fusarium oxysporum *neoformans*

inhibition zone

SGA

, Bauer

C. albicans (3-5) 25° C

, (5-7) *F. oxysporum* *Cr .neoformans*

5 ml

.(1995, Anonymous) / 1×10^6 haemocytometer

() SGA

0.2 ml

10

L-shape

0.5 g ()

. PVA

0.5 g

25 °C

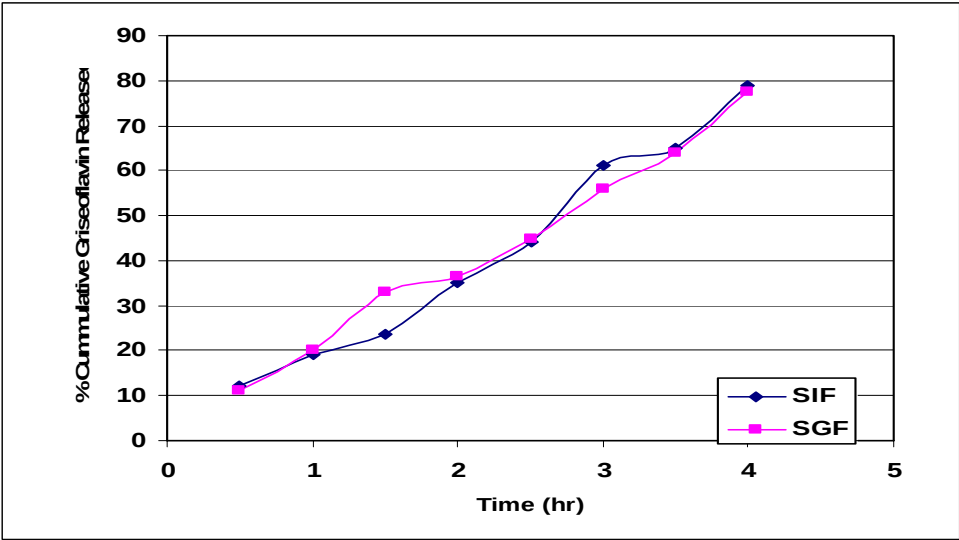
.....

many type ANOVA test
0.05 LSD
 . (1980 ,)

.1

(3)

37°C



37°C

(3)

Q

.2

Q

:

$$Q=\left(\frac{W_s}{W_s-W_d}\right)*100$$

: Q

:Ws

: Wd

46%

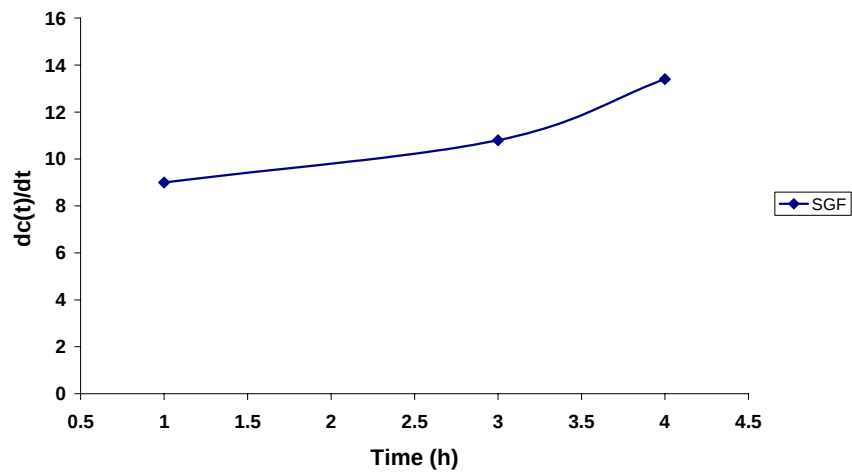
. 32%

40%

(5) (4)

, 37 °C

. surface eroding

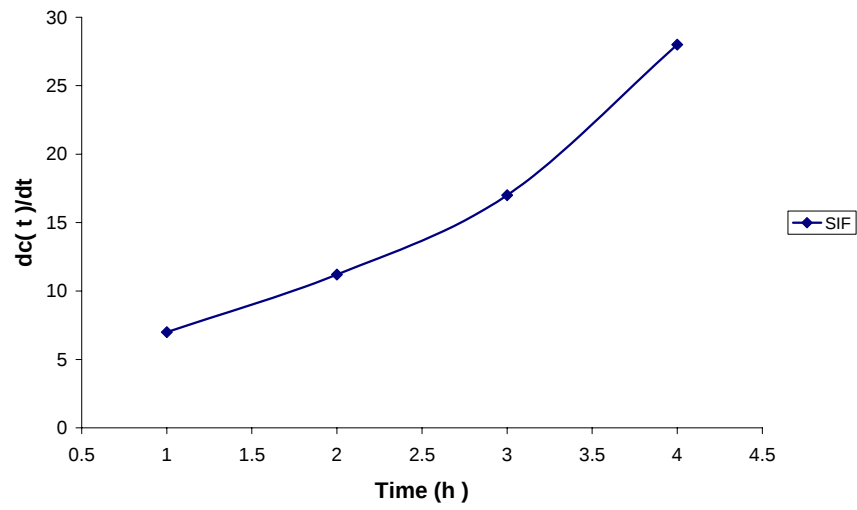


surface eroding

(4)

37 °C

.....



surface eroding (5)
37° C

.3

(1)

C.albicans

,

. (1)

C. PVA (2)

. *albicans*

Cr. neoformans (2)

)

.(4) *Cr.neoformans* ,(2

F.

F. (1) *oxysporum*

oxysporum

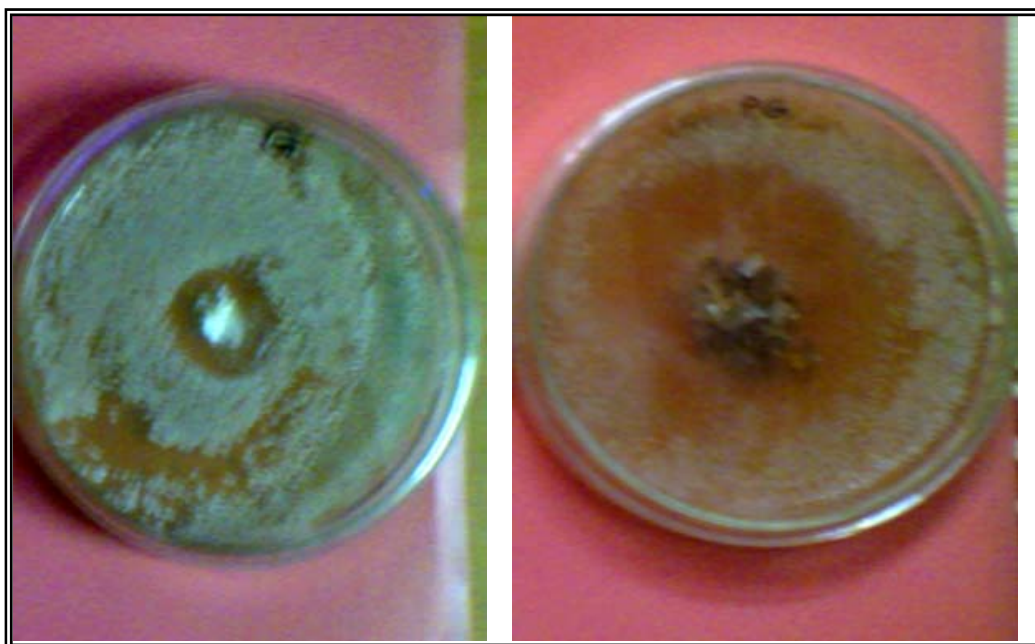
, (5)

. *F. oxysporum* (6)

(1)

Candida albicans

قطر التثبيط (cm) خلال فترات زمنية مختلفة						
2.1	2.1	2.1	2.1	2.4	2.5	
5	5	5	5.3	5.5	5.5	



(1)

Candida albicans



Candida albicans (2)

(2)

. Cryptococcus neoformans

						(cm)
0	0	0	0	0	0	
4.1	4.1	4.1	4.2	4.2	4.2	



(3)

. *Cryptococcus neoformans*



. *Cryptococcus neoformans*

(4)

(3)

. *Fusarium oxysporum*

						(cm)
0	0	0	0	0	0	
9	9	9	9	9	9	



(5)

. *Fusarium oxysporum*

. *Fusarium oxysporum*

(6)

, 20

1997, Bussche)

. (2003, Borden-Pallier

PVA

,

. (2004, Kim 1973 , Lin)

PVA

,

Nam 2001, Gopferich Siepmann 1997, Mongia Peppas)
 . (2004 , Simmons Peppas 2004 ,

osmolyte
 (2006 , Street)
 Cr. (3 2 1)
F. oxysporum *neoformans*
C.albicans
F. oxysporum *Cr. neoformans*
C.albicans
 PVA
 Cr. (3 2)
F.oxysporum *neoformans*

chlamydospores
 1998 , Murphy Buchanan 1995, Larone)
 . (2004, Poeta

PVA

.
 . (1998)
 . 132-141 .
 . (1999)
 . 107 – 95 : 1 , 8 ,

. (1980) , ,
488 . – , .

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