Prosopis farcta

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Prosopis farcta

Prosopis farcta

(NaOCl) %96
10 (:) (:) (2:1)

MS

(2,4-D) Benzyl adenine (BA)

Dichlorophenoxyacetic acid

2,4-D BA / (0.5, 2.5)

/ 1

R_f

Thin Layer Chromatography (TLC)

R_f

Initiation and Differentiation of *Prosopis farcta* Callus and Extraction of Caffeic Acid from it

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ABSTRACT

The study included the role of some plant growth regulators and their effect in *Prosopis farcta* explants response for initiation and growth of callus cultures and detection for caffeic acid in the callus cultures.

Results showed that the best treatment for sterilization of *Prosopis farcta* seeds was treating the seeds with 96% ethanol for 2 min., then treating them with sodium hypochlorite diluted with distilled water (1 : 2) (water : sodium hypochlorite) (v : v) for 10 min. Results also showed that when *Prosopis farcta* seedling stem explants containing nodes were cultured on MS solidified medium containing 2.5 mg/l of BA and 0.5 mg/l of 2,4-D was the best to initiate and grow of callus depending on fresh weight of callus.

This study included the detection of caffeic acid in callus cultures of *Prosopis* using Thin layer chromatography (TLC). It was found that the Rf value of the standard sample is almost the same as that for the callus sample. It was concluded that callus cultures of *Prosopis* contain caffeic acid.

Keywords: *Prosopis farcta*, Caffeic Acid.

(Townsend, 1974 ; Qasem, 2006)

Prosopis

Leguminales (Fabales)

Mimosaceae (Fabaceae)

Prosopis farcta *Prosopis juliflora* :

.(Townsend, 1974)

(Kovacs *et al.*, 2007; Vanisree *et al.*, 2004)

.....

)

.(Vanisree *et al.*, 2004 1990*Prosopis farcta*(Heidari *et al.*, 2011)

; 1993)

)

.(2011

(2002 a

.(2003 ; 2002b)

(Harzallah and Jannet, 2005)

Rutin

Caffeic acid

.

) .

.(2010

(2011)

.

:

Prosopis farcta

.

(10)

Petri dishes

(°1±25)

(4)

10

%96

(NaOCl)

(15, 10, 5) (:) (:) (2:1) (1:1) (%6.4)

(4-3)

Arnon and Hoagland,) Hoagland Arnon

(1944

.(Hepaire)

(°1±25)

(Growth chamber)

(8)

(16)

(4-3)

:

100 × _____ = (%)

Explants

(20-18)

(1.5-1)

(Murashige and Skoog, 1962) (MS)

.(Hepaire)

(Explants)

(8)

(16)

(°1±25)

.....

/ (0.6, 5.0, 2.5, 1.5, 1.0) (BA) Benzyl Adenine
/ (1.5,1.0,0.5,0.0) 2,4-Dichlorophenoxyacetic acid (2,4-D)
MS₀
()

(120, 80, 40) (MS)
.

Prosopis farcta

5 (1992)
%96 3 15
5
(° 30-25)
% 96 5

% 96 3 1 1

Thin Layer Chromatography

(Merck,Germany) (Silica gel, 20×20 cm, 0.2mm)
30 100

: [5:1:4] [: :]
(2011)

15

.

.

(Hanovia, Mark of Ultra-Violet / England F/U16)UV

()

(R_f) Rate of flow(R_f)

:(Plumer, 1978) (Control)

$$\frac{\text{المسافة التي قُطعتُها العينة المفصولة}}{\text{المسافة التي قُطعتُها المذيب}} = (R_f) \text{تِيْمَة}$$

(1) 3

.% 100

.(Toole *et al.*, 2000; Steinbauer, 1987)

.....

3 *Prosopis farcta*

:1

.

(NaOCl)
 .(%98) (15 10) (:) (2:1)
 .(2) (1)
 15 10
 .(1990)
 (:) (1:1)
 (:) (1:2) (15, 10, 5)
 (1)

.(Neumann *et al.*, 2009 ; Street, 1977)

Prosopis farcta

:1

.(NaOCl)

%	()	(:) (:)
		(1:1)
75	5	(1:1)
80	10	
90	15	
95	5	(1:2)
98	10	
98	15	

5 :

Arnone and Hoagland

Prosopis farcta

:2

(20)

BA

MS

: 40

2,4-D

MS

Prosopis farcta

(2)

2,4-D BA

.....

/ 2.5 MS

(2) % 92

%80

2,4-D / 0.5 BA

(A, B-3)

.(2)

(Street, 1977)

.(Razdan, 2003 ; Hartmann *et al.*, 2002)

2,4-D BA

(C-3) (2)

.(1990)

MSO

%40

.(Pierik,1997)

Prosopis farcta

:2

2,4-D

BA

MS

40

1.5	1.0	0.5	0.0	2,4-D mg/l BA mg/l
85	90	85	80	1.0
80	* 80	85	84	1.5
82	80	92	90	2.5
80	80	90	80	5.0
85	85	90	80	6.0
			40	MS ₀

* . 5 :

MS *Prosopis farcta* :3
40 2,4-D BA
(BA) / 2.5 + (2,4-D) / 0.5 :B .(BA) / 2.5 :A
. (BA) / 1.5 + (2,4-D) / 1.0 : C

MS *Prosopis farcta*
80 2,4-D BA
80 (3)
(B A -5)
BA / 2.5 MS
2,4-D / 0.5 BA / (6.0,5.0 2.5)
BA %(99-98)
. 2,4-D
(Kumar and Singh, 2009)
BA

.....

40 .kinetine

(3) BA 2.5
2,4-D BA / 1.0

.%96

MS .(4)
2,4-D BA / (1.5,1.0)
MS
(3) 80
(Pierik,1997)

Prosopis farcta :3
80 2,4-D BA MS

1.5	1.0	0.5	0.0	2,4-D mg/l BA mg/l
88	96	88	82	1.0
82	**80	88	86	1.5
84	84	98	99	2.5
82	82	98	84	5.0
88	86	98	82	6.0
			----	MS ₀

. ** --- 5 :

MS *Prosopis farcta* :4

. 80 2,4-D BA
BA / 2.5 + MS :B 2,4-D / 0.5 + BA / 2.5 + MS :A

: 120 80

80

.(4)

/ 2.5 BA

/ 0.5 BA / (6.0,5.0,2.5) 0.91

/ 1 2,4-D

.(4) (0.85-0.8)

(4)

(0.62-0.4)

BA / 1 MS

. 0.4

Prosopis farcta :4
(80) 2,4-D BA MS

1.5	1.0	0.5	0.0	2,4-D mg/l BA mg/l
()				
0.51	50.8	0.42	0.40	1.0
0.44	**0.45	0.62	0.75	1.5
0.52	0.65	0.80	0.91	2.5
0.50	0.44	0.85	0.72	5.0
0.50	0.40	0.80	0.55	6.0

**

5 :

(120) *Prosopis farcta*
(120)

BA / (6.0,5.0,2.5) 2,4-D / 0.5 MS
2,4-D BA / 1.0
BA / 2.5 (2.3-2.0)
1.82
/ 1 MS (0.95-0.5)
(5) 0.5 2,4-D / 0.5 BA
2,4-D BA

(Jain and Häggman, 2007 ; Razdan, 2003)

BA / 2.5 MS (5)
2,4-D / 0.5
(0.5,2.5) 40
/ 1.0 2,4-D BA /
Prosopis farcta 2,4-D BA

.....

.(6)

R_f R_f 0.84 R_f (0.8)

.(Wall, 2005)

:6

.TLC

120 *Prosopis farcta*

:A

2,4-D / 0.5 + BA / 2.5 MS :B

Prosopis farcta (2010)

(4)8

(2002a)

:

(2002b)

:

(2003)

:

() *Achillea* L. (1992)

(2011)

(-2)-3- -2-

(B :5)37 ()

(1993)

(1990)

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