

()

PCR

*

(/ / : / / :)

Erwinia amylovora

E. amylovora (Ea)

×

DIBA

PCR

PCR **B** **A**

pstI pEA29

x x

Nested-PCR

Ea

AJ76 AJ75

Nested-PCR *Erwinia amylovora*

E. amylovora

Erwinia amylovora (Burr.)

(Miller & Schroth, 1972; Falkenstein *et al.*, 1988; Bereswill *et al.*, 1998)

(1920) Winslow *et al.*

			Thompson & Cherath .	<i>E. amylovora</i>
)				(1976)
(<i>E. amylovora</i>	
-			(1987) Lin <i>et al.</i> .(Vanneste, 2000)	
			(Lelliott & Stead, 1987;	
			Zielke McLaughlin <i>et al.</i> , 1989; Vanneste, 2000)	
(1987) Lelliott & Stead				(1993)
(Nutrient agar)				<i>E. amylovora</i>
			(1996) Gorris <i>et al.</i> .	
	±			
			(Gorris <i>et al.</i> ,	
			.1996; Vanneste 2,000)	
	pEA29		(1988) Falkenstein <i>et al.</i>	
	DNA		Ea	
			P ³²	
			(Zhang & Geider,	
E.a			Bereswill <i>et al.</i> .1997; Zhang <i>et al.</i> , 2000)	
)	322A		<i>E. amylovora</i> PCR (1992)	
Ea1	((Bereswill <i>et al.</i> , 1992; Bereswill <i>et al.</i> ,	
E.a 322	Tn5		1992; Zhang & Geider, 1997; Vanneste, 2000;	
			(1995) McManus & Jones .Zhang <i>et al.</i> , 2000)	
(Steinberger & Beer,		PCR-Dot-Blot	Nested-PCR	PCR
	1988)			
		Reverse-Blot	Hybridization	ybridization
				<i>E. amylovora</i>
Klement <i>et al.</i>	(HR)			
				PCR
	(1990)			
	(2001) Schaad <i>et al.</i>			
4. Klaus Geider		1. Immunofluorescence		
5. Cornell University		2. Enrichment		
		3. Colony hybridization		

(1993) Hampton *et al.*

/ (Fahy & Hayward, 1983)

(Schaad *et al.*, 2001)

(1987) Lelliot & Stead

(King's medium B) KB

(2001) Schaad *et al.*

(1983) Fahy & Hayward

Lelliot & Stead

(1987)

YDC

(Yeast extract-dextrose- CaCO_3)

(Eusine methylene blue agar) EMB

(2001) Schaad *et al.*

Pectobacterium carotovorum

P. carotovorum subsp. *wasabiae* subsp. *carotovorum*

P. fluorescens *Pseudomonas syringae* pv. *syringae*

Hawkes *et al.*

(1987) Leach *et al.* (1982)

(2001) Schaad *et al.*

(MR-VP)

(1983) Fahy & Hayward

(CFU)

Jones *et al.*

(1983)

Ea1

Ea2

1. Simmon's citrate agar
 2. Difco
 3. Thornley
 4. Methyl Red and Voges-Proskauer Tests

... PCR

<i>E. amylovora</i>	/ 10x PCR	dNTP
A	/ %	BSA
B	/ /	Taq DNA polymerase DNA

- 1. Bovine serum albumin
 2. DNA template

()

E. amylovora

HRP

) Ea38, Ea39, Ea40

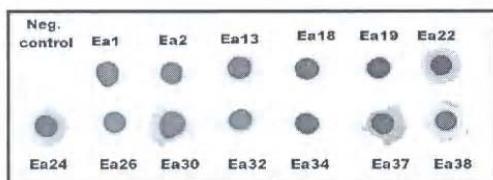
(

x

()

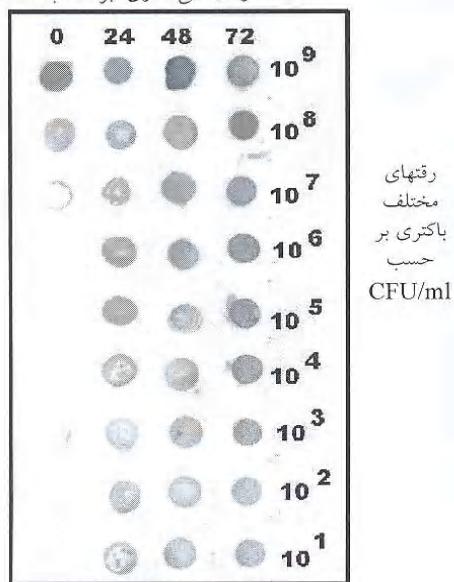
%

()



E. amylovora

مدت زمان غنی سازی بر حسب ساعت



Ea1

Ea38, Ea39, Ea40

(

%

%

YDC

EMB

E. amylovora

DNA

)

Ea40 Ea39 Ea38

E. amylovora

... PCR

DNA Nested-PCR

PCR / ()

PCR

Agarose gel electrophoresis (0.8%) showing DNA ladder and dilution series. Lanes include molecular weight markers (M), dilutions from 2×10^9 to 2×10^1 , and water control. An arrow points to the 0.8 kbp marker.

A grayscale image showing a series of vertical, slightly blurred bands of light and dark gray, representing a film strip or a series of frames.

DNA : (PCR)

E

PCR

amylovora

PCR

()

X

M	Ea1	Ea2	Ea3	Ea8	Ea19	Ea22	Ea24	Ea26	Ea28	Ea32	Ea34	Ea37	Ea38
---	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------

E.amylovora

1) Eal, 2) *A. vitis*, 3) *B. Subtilis*, 4) *E. carotovora* sub sp. *Carotovora*, 5) *E. carotovora* sub sp. *Wasabiae*, 6) *P. fluorescens*. 7) *P. syringae* p. v *syringae*, 8) *X. campestris* p.v. *begoniae* 9, 10) Water

E. amylovora

()) x PCR
) Nested-PCR
 .
 (

(1992) Bereswill *et al.* (1995) McManus & Jones

PCR

DNA

dNTP MgCl₂

Ea2 Ea1

DNA

PCR

E.amylovora

(Bereswill *et al.*, 1998)

× PCR

×

PCR

DNA

(1996) Gorris *et al.*

×

(McManus & Jones, 1995)

E.amylovora

PCR

GeneReleaser

PCR

PVP (CL6B)

(McManus & Jones, 1995; Guilford *et al.*, 1996;
Maes *et al.*, 1996)

Nested-PCR

× ×

(1995) McManus & Jones

DNA PCR

(McManus & Jones, 1995; Schaad *et al.*,

Nested-PCR .2001)

PCR

DNA *E.amylovora*

PCR

DNA

DNA

(McManus &

PCR

Jones, 1995)

(1992) Bereswill *et al.*

PCR

PCR

-
1. Sepharose
 2. Polyvinyl-Pyrrolidone

... PCR

Nested-PCR PCR

E. amylovora

/

PCR

E. amylovora

Nested-PCR

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