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***Agrobacterium vitis* A.tumefaciens biovar1**

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*Agrobacterium vitis*

*A. tumefaciens* biovar1

*A. tumefaciens* *A. vitis*

(Slide agglutination test)

(Agar gel diffusion)

(Chloroplast agglutination)

biovar1

( ) *A. vitis* *A. tumefaciens* biovar 1

*.vitis vinifera* *Agrobacterium vitis* :

Amplidaceae

*vitis*

(.)

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*Agrobacterium vitis*

( )

*A.tumefaciens* *A.radiobacter* ,*A.rehizogenes*

(PAGE)

( )

/ ( ) ( ) ( )

(separating gel)

*A.tumefaciens*

(staking gel)

( )

( )

(tris - glycin) -

/ )

(agar gel diffusion)

(

(agglutination)

)

(chloroplast agglutination)

(

(agar gel diffusion)

( )

(agglutination)

( )

(chloroplast agglutination)

*A. vitis*

*A. tumefaciens*

( )

*A. vitis*

*A. tumefaciens* biovar 1

(MixB) B

*A. vitis*

( Nutrient agar +1% Yeast Extract)YNA

B

/ (2- mercaptoethanol)

/ A (Mix A) A

( / )

/ pH /

/ / SDS

°C  
(sodium dodecyl sulfate) SDS / .( )

cm

(incomplet adjuvant)

.( )

(sodium azide)

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*A. vitis*

*A. tumefaciens*

YNA

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*A. vitis*

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( )

*A.*

*A. vitis*

*tumefaciens* biovar 1

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*A. vitis*

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*A. tumefaciens*

*A. vitis*

*A. tumefaciens*

(Agar gel diffusion test)

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*Agrobacterium*

<i>A. vitis</i>		
<i>A. tumefaciens</i> biovar 1		
<i>A. vitis</i>		
(A.vitis)		
(A. tumefaciens biovar 1)		
+	+	<i>Nicotiana tabacum</i>
+		<i>Pelargonium</i> sp .
		<i>Gamphrena globosa</i>
+		<i>Chenopodium quinoa</i>
		<i>Vigna unguiculatus</i>
		<i>Zea maiz</i>
		<i>Capsicum annum</i>
		<i>Beta vulgaris</i>
	( )	( ) +
<i>A. tumefaciens</i>	( )	<i>A. vitis</i> biovar 1
( )	( )	( )
		<i>Agrobacterium</i>
	( )	<i>A.vitis</i>
( )	<i>A. vitis</i>	
<i>A. tumefaciens</i>		
<i>A. tumefaciens</i> biovar 1)		biovar 1
		(

<i>Agrobacterium</i>	
+	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. vitis</i>
	<i>A. tumefaciens</i> biovar 1
	<i>A. tumefaciens</i> biovar 1
+	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. tumefaciens</i> biovar 1
	<i>A. tumefaciens</i> biovar 1
	<i>A. tumefaciens</i> biovar 1
	<i>A. tumefaciens</i> biovar 1
	<i>A. vitis</i>
	<i>A. tumefaciens</i> biovar 1
+	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. vitis</i>
	<i>A. vitis</i>
	<i>A. tumefaciens</i> biovar 1
	<i>A. tumefaciens</i> biovar 1
+	<i>A. vitis</i>
	<i>A. tumefaciens</i> biovar 1
	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. vitis</i>
+	<i>A. vitis</i>
	<i>A. vitis</i>
	<i>A. tumefaciens</i> biovar 1
	=
	= +

*A. tumefaciens* biovar1 *A. vitis*

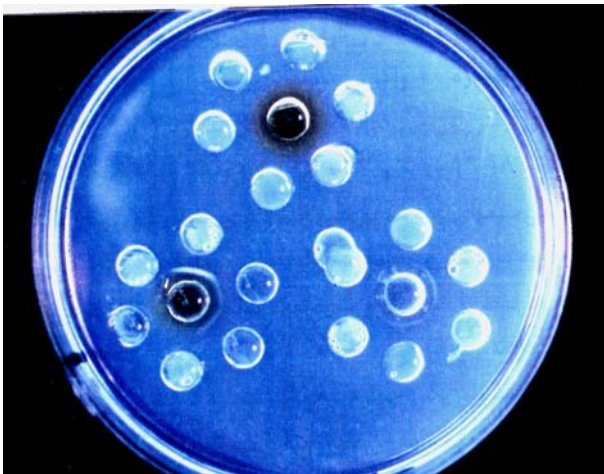
*A. tumefaciens* biovar 1

*A. tumefaciens* biovar 1)

*A. tumefaciens* biovar 1

*A. vitis*

( )



Agrobacterium

( )  
( )

*A. vitis* ( )

*A. tumefaciens* biovar 1

( ) ( )

( )

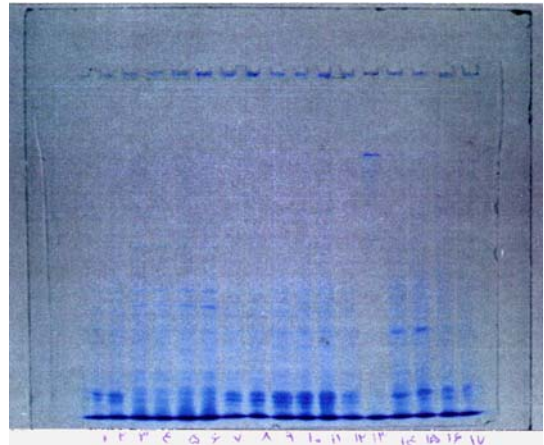
( )

Agrobacterium

( )

(ELISA) enzyme-linked immunosorbent assay

(SAT) slide agglutination test



Agrobacterium

*A. tumefaciens* biovar1

*A.vitis* ( )

*A. tumefaciens* biovar 1 ( )

*A.vitis* ( )

( )

( )

*A. vitis*

*A. vitis*

(*A.vitis*)

G-Ag-26 (A )G-Ag-27  
(C ) 60-G-Ag (B )  
) G -Ag - 19 (D ) NCPPB 2562

(*A. vitis*)

NCPPB NCPPB 1777

(2562

*A.vitis*

(*A.tumefaciens* biovar1)

A.

(*A.vitis*) *tumefaciens* biovar3

A.

*tumefaciens* biovar 3

*A. tumefaciens* biovar 3

SAT

*A. vitis*

SAT

*A. vitis*

( )

(Agglutinaon)

(flagellate)

*A.tumefaciens*

*A.vitis*

biovar 1

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