

# WG1 - 'Study of the molecular variability of phytoplasmas by tuf gene analysis'

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**Stolbur 16SrXII-A**

**'*Ca. P. prunorum*'**



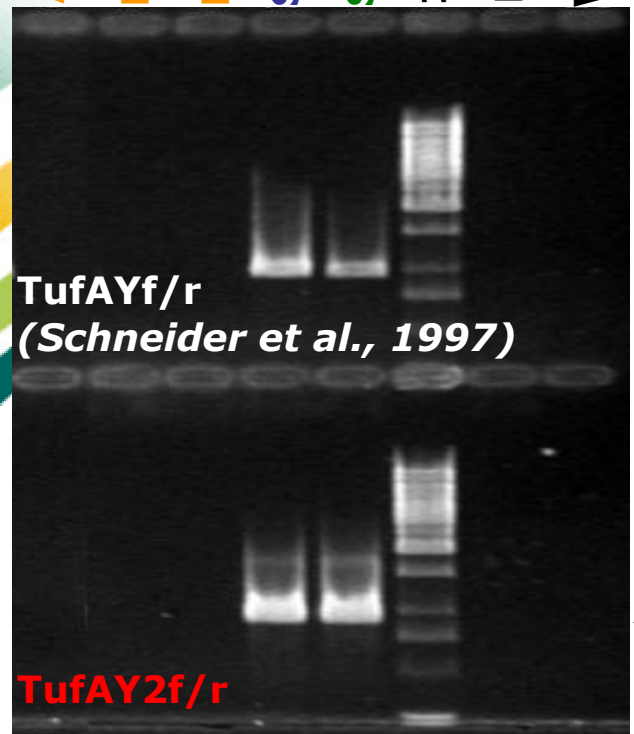
**PCR/RFLP based method**



**Stolbur 16SrXII-A**

**'Ca. P. prunorum'**

AP X-A  
ESFY X-B  
PD X-C  
SAY I-B  
STOL XII-A  
1Kb  
Healthy  
Water

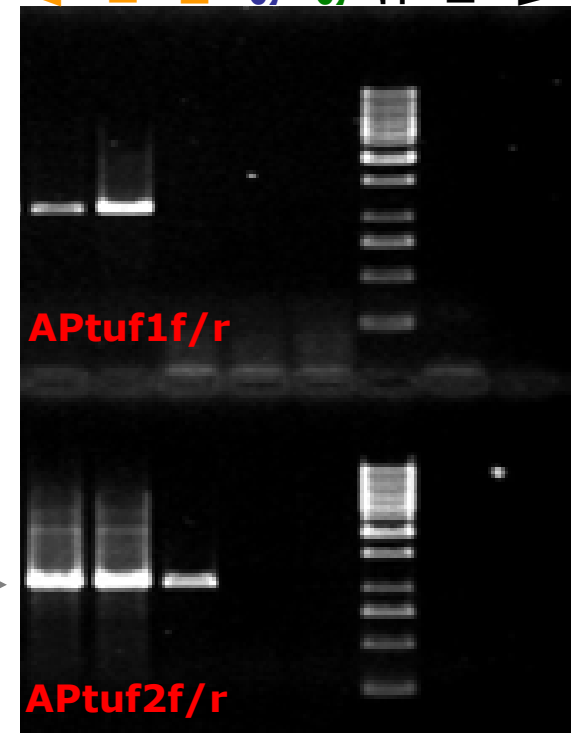


Direct  
PCR

Nested  
PCR

898 ← → 1120

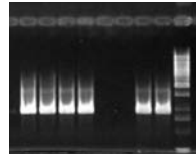
AP X-A  
ESFY X-B  
PD X-C  
SAY I-B  
STOL XII-A  
1Kb  
Healthy  
Water





(Langer and Maixner, 2004)

TufAY2f/r



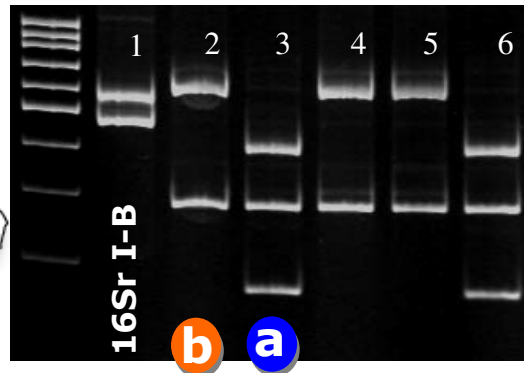
HpaII

16SrXII-A

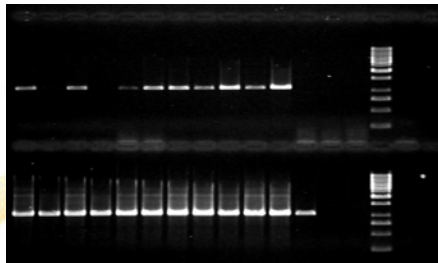
16SrI-B

type a

type b

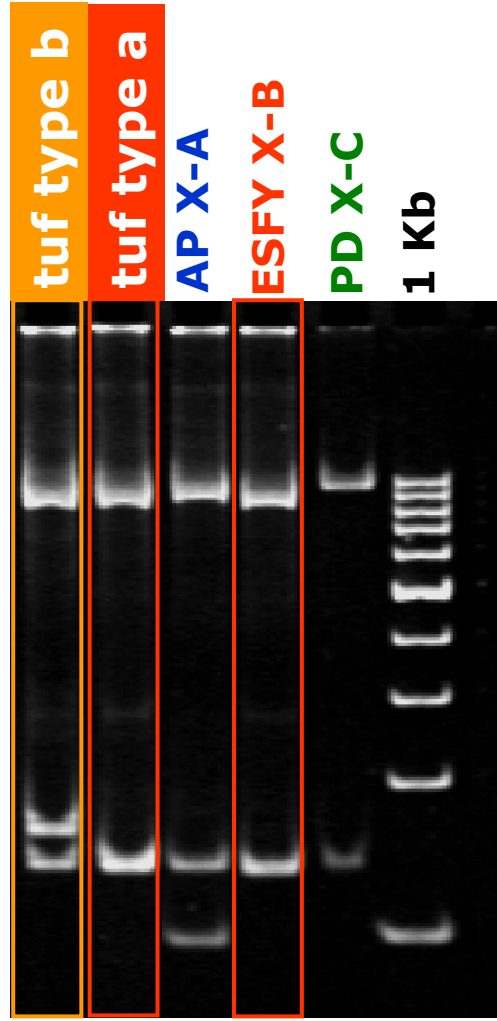


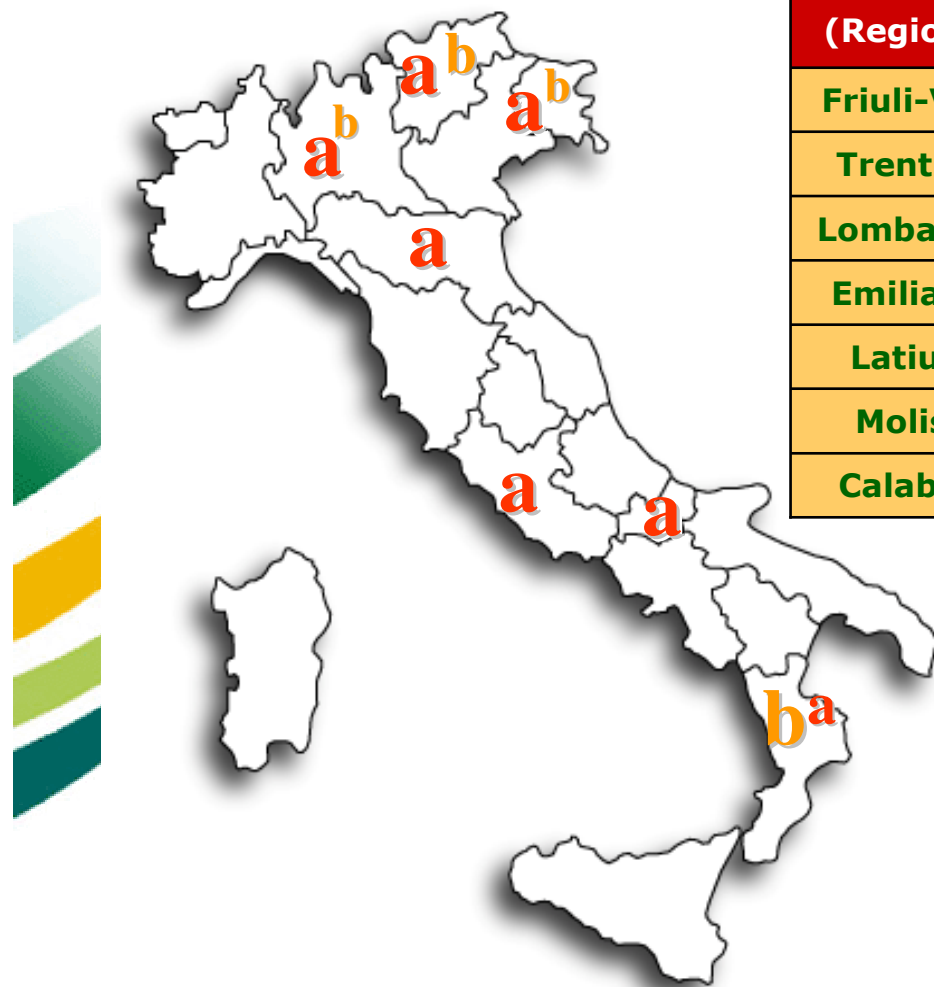
## tuf gene



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Larky Abd 5'GGGTAATGCCACAACCTCTGAAATGTTTTATTAGTTGGCCAAATGGTGTGTATCTAA 300
Honey Sm 5'GGGTAATGCCACAACCTCTGAAATGTTTTATTAGTTGGCCAAATGGTGTGTATCTAA 319
TC Sh 5'GGGTAATGCCACAACCTCTGAAATGTTTTATTAGTTGGCCAAATGGTGTGTATCTAA 300
EFLnk 5'GGGTAATGCCACAACCTCTGAAATGTTTTATTAGTTGGCCAAATGGTGTGTATCTAA 243
Green Sh 5'GGGTAATGCCACAACCTCTGAAATGTTTTATTAGTTGGCCAAATGGTGTGTATCTAA 244
.....
Larky Abd 5'ATTAAATGATTTTTAAATAAATCCGATTTAGTTAAAGAGAGAGATGGATTAATTTAGT 360
Honey Sm 5'ATTAAATGATTTTTAAATAAATCCGATTTAGTTAAAGAGAGAGATGGATTAATTTAGT 359
TC Sh 5'ATTAAATGATTTTTAAATAAATCCGATTTAGTTAAAGAGAGAGATGGATTAATTTAGT 360
EFLnk 5'ATTAAATGATTTTTAAATAAATCCGATTTAGTTAAAGAGAGAGATGGATTAATTTAGT 305
Green Sh 5'ATTAAATGATTTTTAAATAAATCCGATTTAGTTAAAGAGAGAGATGGATTAATTTAGT 304
.....
Larky Abd 5'AGAATGGAAGTTCGCTGAATTTAAACGAATTAATTTGGCCGATAAAACCTCTTT 420
Honey Sm 5'AGAATGGAAGTTCGCTGAATTTAAACGAATTAATTTGGCCGATAAAACCTCTTT 259
TC Sh 5'AGAATGGAAGTTCGCTGAATTTAAACGAATTAATTTGGCCGATAAAACCTCTTT 420
EFLnk 5'AGAATGGAAGTTCGCTGAATTTAAACGAATTAATTTGGCCGATAAAACCTCTTT 363
Green Sh 5'AGAATGGAAGTTCGCTGAATTTAAACGAATTAATTTGGCCGATAAAACCTCTTT 364
.....
Larky Abd 5'TGTAAAGGTTTCGCTTTAAAGCTTTAGAAAGGTACAGATGTTGAAAGCTATAAAATAAT 480
Honey Sm 5'TGTAAAGGTTTCGCTTTAAAGCTTTAGAAAGGTACAGATGTTGAAAGCTATAAAATAAT 319
TC Sh 5'TGTAAAGGTTTCGCTTTAAAGCTTTAGAAAGGTACAGATGTTGAAAGCTATAAAATAAT 480
EFLnk 5'TGTAAAGGTTTCGCTTTAAAGCTTTAGAAAGGTACAGATGTTGAAAGCTATAAAATAAT 423
Green Sh 5'TGTAAAGGTTTCGCTTTAAAGCTTTAGAAAGGTACAGATGTTGAAAGCTATAAAATAAT 424
.....
Larky Abd 5'ATTAGAATTTTAAATGAATATAATGAAATCCAACTCGATGATGAGAAAACGATTTT 540
Honey Sm 5'ATTAGAATTTTAAATGAATATAATGAAATCCAACTCGATGATGAGAAAACGATTTT 379
TC Sh 5'ATTAGAATTTTAAATGAATATAATGAAATCCAACTCGATGATGAGAAAACGATTTT 540
EFLnk 5'ATTAGAATTTTAAATGAATATAATGAAATCCAACTCGATGATGAGAAAACGATTTT 483
Green Sh 5'ATTAGAATTTTAAATGAATATAATGAAATCCAACTCGATGATGAGAAAACGATTTT 484
.....
Larky Abd 5'AATCCAGTTGAAGAGGTTTCACTACTACTGCTGCTGGCAGCTGCTGCTGCTGCTG 600
Honey Sm 5'AATCCAGTTGAAGAGGTTTCACTACTACTGCTGCTGGCAGCTGCTGCTGCTGCTG 439
TC Sh 5'AATCCAGTTGAAGAGGTTTCACTACTACTGCTGCTGGCAGCTGCTGCTGCTGCTG 600
EFLnk 5'AATCCAGTTGAAGAGGTTTCACTACTACTGCTGCTGGCAGCTGCTGCTGCTGCTG 543
Green Sh 5'AATCCAGTTGAAGAGGTTTCACTACTACTGCTGCTGGCAGCTGCTGCTGCTGCTG 544
.....
Larky Abd 5'AGAAGAGGAAAATTATATTAATGAAGAGTTGAGATTTGCTTTAAAGAACTAA 650
Honey Sm 5'AGAAGAGGAAAATTATATTAATGAAGAGTTGAGATTTGCTTTAAAGAACTAA 499
TC Sh 5'AGAAGAGGAAAATTATATTAATGAAGAGTTGAGATTTGCTTTAAAGAACTAA 650
EFLnk 5'AGAAGAGGAAAATTATATTAATGAAGAGTTGAGATTTGCTTTAAAGAACTAA 603
Green Sh 5'AGAAGAGGAAAATTATATTAATGAAGAGTTGAGATTTGCTTTAAAGAACTAA 604
.....
Larky Abd 5'AGTCTATTATTACCAGTATGAAATGTTTAAAAA--GGATTAGAGGTTGCTCAAGCTG 710
Honey Sm 5'AGTCTATTATTACCAGTATGAAATGTTTAAAAA--GGATTAGAGGTTGCTCAAGCTG 558
TC Sh 5'AGTCTATTATTACCAGTATGAAATGTTTAAAAA--GGATTAGAGGTTGCTCAAGCTG 710
EFLnk 5'AGTCTATTATTACCAGTATGAAATGTTTAAAAA--GGATTAGAGGTTGCTCAAGCTG 662
Green Sh 5'AGTCTATTATTACCAGTATGAAATGTTTAAAAA--GGATTAGAGGTTGCTCAAGCTG 664
    
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Italy (Regions)	Tested samples	tuf type	
		type 'a'	type 'b'
Friuli-V.G.	18	94,4%	5,6%
Trentino	22	77,3%	22,7%
Lombardia	13	92,3%	7,7%
Emilia-R.	16	100,0%	-
Latium	28	100,0%	-
Molise	12	100,0%	-
Calabria	20	25,0%	75,0%



Tested samples	tuf type	
	type 'a'	type 'b'
7	42.9%	57.1%

Establishment of a  
collection of stone fruit  
isolates coming from  
different Italian and  
European areas



Comparison of the molecular  
variability on different genes