

Table S2

a)

TuMV	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
P1	92(except St48_Italy)	100	100	100	88	-
HC-Pro	100	100	100	100	99	100
P3	100	100	100	100	100	98
6K1	82	79(except ITA7_Italy)	96	78	-	87
CI	100	100	100	100	86	100
6K2	100	-	99	78	86	74
VPg	100	88	100	-	-	98
NIa-Pro	100	100	99	-	-	43
NIb	100	99	100	-	-	89
CP	100	78	97	100	53	53
Concatenated genes	100	100	100	100	92	100

b)

PV	$\alpha+o$	$\beta+\xi$	$\lambda+\mu$	$\delta+\theta$
E6	-	-	-	46
E7	-	-	-	60
E1	99	59	41	99
E2	100	18(except PBV7)	28	91
L2	100	-	66(except HPV41,EdPV)	100
L1	100	66	86	28
Concatenated genes	100	94	100	100