

## Primers used for MLST of *Candidatus Liberibacter solanacearum*

### Genes

This MLST scheme uses internal fragments of the following seven house-keeping genes:

*adk* (adenylate kinase)  
*atpA* (F0F1-type ATP synthase, alpha subunit)  
*fbpA* (fructose-1,6-bisphosphate aldolase)  
*ftsZ* (cell division GTPase)  
*glyA* (glycine/serine hydroxymethyltransferase)  
*groEL* (chaperonin, HSP60 family)  
*gyrB* (type IIA topoisomerase, B subunit)

### PCR amplification and sequencing

The MLST primers were designed by Jinhui Wang at the Department of Agricultural Sciences, University of Helsinki, Finland.

The primers used for the PCR amplification and Sanger-sequencing of internal fragments of these genes are:

Primer	Sequence 5'-3'	PCR product length (bp)	Trimmed sequence (bp)
adk-F	CGTGCAGAAGTTAGTAAGGGTA	443	399
adk-R	ACTGTATCCGCATCTAACATTC		
adk-F1*	CCTCAATTATCAACGGGTGATA	518	474
adk-R1*	ACAGCATTTCCTCTATAGAA		
atpA-F	GGTAAAGGTCCCATTGAATGTA	661	617
atpA-R	AAGCAGAAACATCATTAACCTG		
fbpA-F	ATGCGATCAATGTAGAATCAAC	631	587
fbpA-R	AGTATTCGTATGGTCTTGTTTCG		
ftsZ-F	ATTCTTGGTGCTACATTTGATG	640	597
ftsZ-R	AATGAGACTGACGACGTAAAA		
glyA-F	ACGACAACACACAAGTCTTTAA	591	547
glyA-R	AGCAAAATCATAGGTAGGGAAA		
groEL-1F	AGTTGGAAGTCGTGAAGAAATC	634	590
groEL-1R	TTCATAATACGAGCCTGAACT		
gyrB-F	GTTGGTGATGATTGTAGAGAGG	677	633
gyrB-R	CCATAGAGAGGTGGTTTTATGA		

\*Alternative primers used with *Ca. L. solanacearum* haplotype U (Haapalainen et al. 2018, *Phytopathology* 108: 925-934)