

EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION
ORGANISATION EUROPEENNE ET MEDITERRANEENNE POUR LA PROTECTION DES PLANTES
Summary sheet of validation data for a diagnostic test

The EPPO Standard PM 7/98 *Specific requirements for laboratories preparing accreditation for a plant pest diagnostic activity* describes how validation should be conducted. It also includes definitions of performance criteria.

Laboratory contact details	ILVO Institute for Agricultural and Fisheries Research Burg. Van Gansberghelaan 96, 9820 Merelbeke, Belgium
Short description of the test	Detection of 'Candidatus Liberibacter solanacearum' by means of the real-time PCR procedure
Date, reference of the validation report	2016-06-28 - F16_V13
Validation process according to EPPO Standard PM7/98?	yes
Is the lab accredited for this test?	yes
Was the validated data generated in the framework of a project?	
If yes, please specify	
Description of the test	
Organism(s)	'Candidatus Liberibacter solanacearum'(LIBEPS)
Detection / identification	detection
Matrix(ces) tested	Leaves, Roots leaves, petioles, roots
Plant species tested	Daucus carota, Solanum tuberosum
Method(s)	Molecular Extraction DNA RNA Molecular real time PCR
Method: Molecular Extraction DNA RNA	
Reference of the test description	
As or adapted from an EPPO diagnostic protocol	
New test being considered for inclusion in the next version of the EPPO diagnostic protocol?	
As or adapted from an IPPC diagnostic protocol	
Is the test modified compared to the reference test	
Kit	
Is a kit used	yes

Manufacturer name	QIAGEN
Specify the kit used	DNeasy Plant kit
Kit used following the manufacturer's instructions?	
Other information	
Other details on the test	
Method: Molecular real time PCR	
Reference of the test description	
As or adapted from an EPPO diagnostic protocol	
New test being considered for inclusion in the next version of the EPPO diagnostic protocol?	
As or adapted from an IPPC diagnostic protocol	yes
IPPC diagnostic Protocol name	ISPM 27 Annex 21 DP 21: Candidatus Liberibacter solanacearum (version 2017)
Name of the test	Li et al. 2009 Li W., Abad J.A., French-Monar R.D., Rascoe J., Wen A., Gudmestad N.C., Secor G.A., Lee I-M., Duan Y., Levy L. Multiplex real-time PCR for detection, identification and quantification of 'Candidatus Liberibacter solanacearum' in potato plants with zebra chip. Journal of Microbiological Methods 78, 59-65 (2009).
Is the test modified compared to the reference test	
Kit	
Is a kit used	
Other information	
Reaction type	
Other details on the test	
Are the performance characteristics included in the EPPO diagnostic protocol?	no
Performance Criteria :	
Organism 1.:	'Candidatus Liberibacter solanacearum'(LIBEPS)
Analytical sensitivity	
What is smallest amount of target that can be detected reliably?	
Diagnostic sensitivity	
Proportion of infected/infested samples tested positive compared to results from the standard test, see appendix 2 of PM 7/98	
Standard test(s)	
Analytical specificity - inclusivity	

Number of strains/populations of target organisms tested	2 Ca. L. solanacearum Isolate potato (USDA, Venkat, Texas, USA) RefV_CaLso_01 Ca. L. solanacearum Isolate carrot (origin Marocco) RefV_CaLso_02
Specificity value	
Analytical specificity - exclusivity	
Number of non-target organisms tested	20 Arabis mosaic virus Cucumber mosaic virus Potato leaf roll virus Potato virus Y Potato virus X Potato spindle tuber viroid Strawberry latent ringspot virus Tobacco rattle virus Tomato black ring virus Tomato ringspot virus Clavibacter michiganensis subsp. sepedonicus Dickeya solani Ralstonia solanacearum Rhizoctonia solani Verticillium dahliae Candidatus Phytoplasma asteris (aster yellows fytoplasma) Candidatus Phytoplasma solani (stolbur fytoplasma) Candidatus Liberibacter asiaticus Candidatus Liberibacter africanus Candidatus Liberibacter americanus
Specificity value	In some cases, late reaction (Cq >38) for Ca L americanus observed
Cross reacts with	
Diagnostic Specificity	
Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test	
Specify the test(s)	
Reproducibility	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	100%
Repeatability	
Provide the calculated % of agreement for a given level of the pest (see PM 7/98)	100%
Test performance study	
Test performance study?	yes
Brief details of the test performance study and its output. It available, link to published article/report	2017 - ANSES (Test performance study, including two real-time PCR methods (Li et al 2009 and Teresani et al 2014) and three conventional PCR (Li et al 2009; Munyaneza et al 2009, Ravindran et al 2011))
Other information	
Any other information considered useful	

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