A multiplex-PCR assay for identification of the quarantine plant pathogen Xanthomonas axonopodis pv. phaseoli

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Résumé en anglais	In this study we developed an algorithm to screen for all exact molecular signatures of the quarantine pathogen Xanthomonas axonopodis pv. phaseoli (Xap), based on available data of the presence or absence of virulence-associated genes. The simultaneous presence of genes avrBsT and xopL is specific to Xap. Therefore we developed a multiplex PCR assay targeting avrBsT and xopL for the molecular identification of Xap. The specificity of this multiplex was validated by comparison to that of other molecular identification assays aimed at Xap, on a wide collection of reference strains. This multiplex was further validated on a blind collection of Xanthomonas isolates for which pathogenicity was assayed by stem wounding and by dipping leaves into calibrated inocula. This multiplex was combined to the previously described X4c/X4e molecular identification assay for Xap. Such a combination enables the molecular identification of all strains of Xanthomonas pathogenic on bean. Results also show that assay by stem wounding does not give reliable results in the case of Xap, and that pathogenicity assays by dipping should be preferred.
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