DETECTION AND GENOTYPING OF *SINORHIZOBIUM MELilotI* BY SPECIFIC LOCI SEQUENCING

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**Background:** Multi-locus sequence typing (MLST) is a frequently used genotyping method based on algorithm analysis of housekeeping genes. Although high discriminatory resolution is obtained, MLST markers are conserved in a wide range of organisms and therefore are not suitable for microorganisms' detection. In contrast, current detection methods rarely achieve an infra-specific resolution.

**Objectives:** Select and validate DNA-based taxa-specific molecular markers for simultaneous detection and genotyping.

**Methods:** *Sinorhizobium meliloti* specific markers were selected and validated by PCR essentially as described by Vieira et al. (1). The genotyping potential of the detection-specific markers was assessed by sequencing and comparison with MLST commonly used loci.

**Results:** Three molecular markers, targeting *S. meliloti* chromosome and the two megaplasmids pSymA and pSymB, were shown to be specific for 21 strains of *S. meliloti* tested and absent from the 9 *S. medicae* strains analysed. Sequencing analysis of the amplified *S. meliloti* specific loci showed that the genotyping efficiency of these markers were higher than the obtained with MLST (2). In addition, we were able to use the markers for detection and genotyping of *S. meliloti* directly from Medicago sp. root nodules.

**Conclusion:** In this study, three markers have been validated for *S. meliloti* simultaneous detection and genotyping avoiding the need to obtain isolates.

**References:**
