

DEVELOPMENT AND USE OF CHLOROPLAST MICROSATELLITES (CPSSR) IN *PHASEOLUS* SPP. AND OTHER LEGUMES

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Due to their relatively high levels of polymorphism and because they are generally inherited uniparentally, chloroplast microsatellites represent a useful tool for the study of genetic variation and evolution of plants. The flanking regions of chloroplast microsatellite loci are conserved among different related species, and so this allows the testing of primer pairs that were developed for one species also in species belonging to the same genus, to the same family, and even to different families.

We screened 35 primer pairs from those published in the literature, and 27 of them gave a single and scorable fragment in a small set of *Phaseolus* accessions. For one locus, we redesigned the primer pair using the published *Phaseolus* sequence to optimise the quality of the PCR product. Finally, a further two markers were designed using published *Phaseolus* sequences, for a total of 29 markers that were selected for further analysis. All 29 primer pairs were used to analyse a core set composed of 8 different genera of *Leguminosae* (*Phaseolus*, *Lupinus*, *Pisum*, *Arachis*, *Vigna*, *Cicer*, *Glycine* and *Medicago*) and 5 different species of *Phaseolus* (*P. vulgaris*, *P. coccineus*, *P. dumosus*, *P. lunatus* and *P. acutifolius*). Among all the 29 primer pairs tested, 27 were polymorphic among the genera, of which 18 were polymorphic within the *Phaseolus* genus and 14 were polymorphic in *P. vulgaris* or *P. coccineus*. Our results suggest that these sets of markers could be very useful tools to study the diversity and the evolution of several legumes, and particularly of the *Phaseolus* species like *P. vulgaris* and *P. coccineus*.