

# IDENTIFICATION OF AFLP MARKERS LINKED TO SELF-COMPATIBILITY IN 'CRISTOBALINA' SWEET CHERRY

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Self-compatibility in a naturally self-incompatible species like sweet cherry is a highly interesting trait for breeding purposes. The use of self-compatible varieties in sweet cherry orchards can avoid some of the problems caused by self-incompatibility, such as the cost and erratic yields derived from the need to use pollinator varieties. However, spontaneous self-compatibility in sweet cherry is a very rare phenomenon and artificially induced self-compatibility is based in a reduced number of self-compatibility sources resulting in a limited genetic base of self-compatible cultivated sweet cherries. 'Cristobalina' is a self-compatible local Spanish sweet cherry cultivar. Preliminary studies on this cultivar have determined that self-compatibility is caused by the loss of function of both pollen S haplotypes. Additionally, the sequence of the genes involved in the self-incompatible reaction (*S-RNase* and *SFB*) are identical to those of self-incompatible genotypes with the same S alleles. Therefore, it is possible that self-compatibility in this cultivar is caused by other factor/s outside the *S* locus. The objective of this study is to identify molecular markers linked to self-compatibility in 'Cristobalina' for their subsequent use in marker assisted selection of this trait. For this purpose, a segregating population derived from 'Cristobalina' was used. The phenotype of the individuals was determined by fluorescence microscopy in controlled crosses and bulk segregant analysis was carried out using AFLP markers. Polymorphic AFLP markers were searched by analysing the parental genotypes and self-compatible and self-incompatible DNA bulks. The linkage of the polymorphic markers to the incompatibility trait was analysed in the rest of the segregating population.