



Genetic analysis of molecular markers for propamocarb residue in *Cucumis sativus* using quantitative trait locus mapping

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ABSTRACT. The use of pesticides to protect plants against harmful organisms, such as pathogenic microorganisms, is one of the most effective ways to improve agricultural production. However, the continuous use of pesticides might present a risk to human health, animals, and the environment. In this study, two cucumber (*Cucumis sativus*) varieties containing different levels of pesticide residues, D9320 and D0351, were selected to establish an F₂ population. A genetic model and genetic linkage map were constructed. The results showed that the heredity of pesticide residues was dominated by an additive effect and was significantly influenced by non-additive factors in cucumber. *Qcpl* was detected as a quantitative trait locus (QTL) that might be involved in regulating the levels of pesticide residue in

cucumber. Moreover, the cucumber genetic map was compared with the LG6 map, and the results indicated that this QTL was closely related to the level of pesticide residue in cucumber.

Key words: *Cucumis sativus* L.; Pesticide residue; Genetic analysis; Simple sequence repeats; Quantitative trait locus