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MOLECULAR CHARACTERIZATION OF OL-2 LOCUS CONFERRING POWDERY MILDEW RESISTANCE IN TOMATO

C. LOTTI*, L. RICCIARDI**, C. DE GIOVANNI**, R. PANSTRUGA***

*) Dipartimento di Agro-Environmental Science, Chemistry and Plant Protection – University of Foggia, Via Napoli 26, 71100 Foggia, Italy
**) DiBCA, Genetics and Plant Breeding Unit - University of Bari, Via Amendola 165/A, 70125 Bari, Italy
***) Max Planck Institute for Plant Breeding Research, Department of Plant Microbe Interactions, Carl-von Linné - Weg 10, D-50829 Koln, Germany

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Powdery mildew (*Oidium lycopersici*) is a common fungal disease of tomato. The pathogen can cause severe damages both on glasshouses-grown tomatoes and on field crops, especially when high relative humidity occurs.

A recessive gene, named *ol-2* conferring resistance against the pathogen was found in an accession of *Lycopesicon esculentum* var. c*erasiforme*. Previous studies, performed by mean of BSA analysis on resistant (R28 accession) and susceptible parents (Super Marmande) and on F2 segregant population, allowed to identify molecular markers linked to *ol-2* and localize it on chromosome 4.

The main objective of the present work was to characterize the chromosome region in wich *ol-2* lies. For this purpose, based on the knowledge of similarity among resistance gene families, a comparative sequence analysis among resistance genes identified in other species was perfomed.

Nucleotide sequences of *mlo* and *mlo2* (respectively, oidium resistance genes identified in barley and arabidopsis) were used to identify homologous sequences in *Solanaceae* database. An EST of tomato was found and, on the basis of its nucleotide sequence, a set of primer were drawn to amplify mRNA and genomic DNA of the two partents used in the bulk segregant analysis.

Molecular characterization of the cDNA and the genomic region in which lies *ol-2* was performed using different primer combinations in order to establish molecular diversity between resistant and susceptible parents.