BARD

FINAL REPORT

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**Cloning a Fusarium Resistance Gene in Tomato
Based on Knowledge of its Map Position**

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Cloning a Fusarium resistance gene based on knowledge of its map positionInvestigators' Names
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Investigators' Institutions

Hebrew Univ.Weizmann Inst.Cornell Univ.Project's starting date: 1991Type of Report: 1st Annual ☐ 2nd Annual ☐ Final ☒
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CLONING A FUSARIUM RESISTANCE GENE IN TOMATO BASED ON KNOWLEDGE OF ITS MAP POSITION.

Zamir D, R Fluhr and SD Tanksley

Summary

The objectives of this project were to develop the tools and methodologies for positional cloning of genes in tomato and apply them for the cloning a Fusarium resistance gene - *I2*. The feasibility of positional cloning of disease resistance genes was demonstrated for *Pto* which confers resistance to pseudomonas (Martin et al. 1993). The Fusarium resistance gene was mapped genetically and physically and was found to be in close proximity to TG105 (Segal et al. 1992). To obtain fine mapping of the gene *I2*, and additional target genes in future projects, a high density linkage map was developed (Tanksley et al. 1992; Broun and Tanksley 1993). In addition two permanent mapping populations were constructed: a recombinant inbred (Paran et al. 1995; Zamir et al. 1993) and an introgression line population (Eshed et al. 1992; Eshed and Zamir 1994). Using these resources we determined that the *I2* locus shows complete co-segregation, down to a resolution of a few Kb, with SL8 which shows architectural similarity with other plant resistance genes. Transformation and complementation analysis is in progress (Ori et al. in preparation).

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