Proceedings of the XLIX Italian Society of Agricultural Genetics Annual Congress
Potenza, Italy – 12/15 September, 2005
ISBN **88-900622-6-6**

Poster Abstract – B.01

THE ALTERED ROOT DEVELOPMENT IN *ARABIDOPSIS rolD* PLANTS SHOWS THAT *rolD* INTERACTS WITH *AUX1* GENE WHICH IS INVOLVED IN AUXIN CELL TRANSPORT

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Arabidopsis thaliana, rolD, aux1 mutant, roots, development

rolD is an oncogene from *Agrobacterium rhizogenes* whose expression in transgenic tobacco plants stimulates an early and enhanced flowering process while the promoter activity is enhanced by auxin (Mauro et all 1996-2002). In *Arabidopsis* plants, *rolD* insertion exhibits a slight early flowering and an enhanced post-embrionic meristematic activity, promoting vegetative and inflorescence buds at the axils of rosette leaves.

In this work we analyze *rolD* effect on the root apparatus of *A. thaliana* plants. The results show that *rolD* modifies the growing and the architecture of the root apparatus affecting the primary root from its early development. The elongation of the primary root in fact is enhanced in comparison with the wild type. Moreover in contrast with the wild type, lateral roots formation is observed in proximity of the primary root apex. *aux1* mutant is an agiotropic plant exhibiting reduction in lateral root formation. AUX1 gene has been demonstrated to be involved in auxin cell transport. As it is known that root formation is under auxin control, genetic complementation between *rolD* plants and *aux1 arabidopsis* mutant has been carried out. The first results show that *rolD* interferes with *aux1* effect on the root apparatus. In fact the crossed plants show an intermediate root phenotype. The possible role of *rolD* in interacting with auxin transport in the root apparatus is discussed.

Furthermore de novo roots were obtained from TCLs to test the rizogenic potential. Their number is highly enhanced by *rolD* in the absence of exogenous auxin in the medium. Similar experiments with *aux1* mutant and with the double mutant plants are in progress.

Reference

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