NEW INSIGHT INTO ROLD, A GENE THAT AFFECTS ROOTS AND AXILLARY BUDS GROWTH IN ARABIDOPSIS


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rolD oncogene from A. rhizogenes induces strongly flowering potential in both day-neutral tobacco and tomato plants. (Mauro et al. 96, Bettini et al. 2003.)

In tomato, rolD could lead to an increased competence for defense response, as shown by toxin tolerance and increased expression of the systemic acquired resistance (SAR) marker gene PR-1. (Bettini et al. 2003).

In the arabidopsis plants transgenic for rolD we have previously show sign of a sligth early flowering time and of an enhanced proliferation and growth of the basal leaf axillary buds due to cell meristematic post embryonic activity. Moreover primary rolD roots are longer and quite hairy, compared to the controls, meanwhile the number of basal hypocotyl roots is reduced.

In this progress we show that in transgenic rolD plants the SUPERSHOOT gene (SPS) is down-regulated during the juvenile phase. The SPS is a member of cytochrome P450 gene family that negatively regulates lateral buds induction and development due to an altered concentration of cytokinin and auxin.

We also report the analysis of rolD transgenic seedlings treated with cytokinin and auxin hormones and, in turn, with NPA, an inhibitor of auxin transport. Suggestions of data obtained will be discussed.

The analysis of the arabidopsis plants containing DR5-GUS and rolD genes are currently in progress to examine the auxin localization on plant organs and tissues.

Bibliography
- Maria Luisa Mauro, Maurizio Trovato, Angelo De Paolis, Angela Gallelli, Paolo Costantino, Maria Maddalena Altamura - Developmental Biology 1996 180 (2):693-700