MONITORING MESSAGE LOCALISATION OF KNOPE3L, A CLASS II KNOTTED-LIKE GENE, DURING STEM, LEAF AND DRUPE DEVELOPMENT OF PEACH (PRUNUS PERSICA L. BATSCH)


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Two full length cDNAs, KNOPE3L and KNOPE3S, were cloned from peach fruit and the deduced products were 98% and 83% identical to arabidopsis KNAT3 and KNAT4, respectively. KNOPE3L harboured 5 introns which maintained conserved positions as compared to other plant KNOX II members. Southern analyses suggested that each gene is represented by a single copy in the peach genome. KNOPE3L was located on the linkage group 1 of Prunus map by following the segregation of a PCR-RFLP marker in a F2 population of almond (cv. Texas) X peach (cv. Earlygold).

Message localisation was monitored in herbaceous stems performing sections located under the shoot apical meristem and proceeding for 5 internodes downstream. KNOPE3L transcript was spread thoroughly, with peak signal in vascular bundles, and was absent in the epidermis. In sections of stem secondary structure, KNOPE3L message was just phloem-associated. The latter pattern was also observed in leaf petioles. In leaves, the message was absent in the epidermis, but signalled in all the other cell layers. However, in leaves at very early developmental stages the transcript was less abundant than in those at later stages. Finally, an intense signal constantly occurred in bundles of drupes at various stages but not detected in cells of pericarp, mesocarp and endocarp.