



Overexpression of RoDELLA impacts the height, branching, and flowering behaviour of *Pelargonium × domesticum* transgenic plants

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Résumé en anglais	<p>Key message We reported the cloning of a rose DELLA gene. We obtained transgenic <i>Pelargonium</i> lines overexpressing this gene which presented several phenotypes in plant growth, root growth, flowering time and number of inflorescences.</p> <p>Abstract Control of development is an important issue for production of ornamental plant. The plant growth regulator, gibberellins (GAs), plays a pivotal role in regulating plant growth and development. DELLA proteins are nuclear negative regulator of GA signalling. Our objective was to study the role of GA in the plant architecture and in the blooming of ornamentals. We cloned a rose DELLA homologous gene, RoDELLA, and studied its function by genetic transformation of <i>pelargonium</i>. Several transgenic <i>pelargonium</i> (<i>Pelargonium × domesticum</i> 'Autum Haze') lines were produced that ectopically expressed RoDELLA under the control of the 35S promoter. These transgenic plants exhibited a range of phenotypes which could be related to the reduction in GA response. Most of transgenic plants showed reduced growth associated to an increase of the node and branch number. Moreover, overexpression of RoDELLA blocked or delayed flowering in transgenic <i>pelargonium</i> and exhibited defects in the root formation. We demonstrated that <i>pelargonium</i> could be used to validate ornamental gene as the rose DELLA gene. RoDELLA overexpression modified many aspects of plant developmental pathways, as the plant growth, the transition of vegetative to floral stage and the ability of rooting.</p>

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