P004 Post-transcriptional regulation of the pea plastocyanin gene (*PetE*)

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Expression of the pea plastocyanin gene (*PetE*) is regulated both by light and by signals from the chloroplast. Previous work has indicated that the light and chloroplast-controlled regulation operates post-transcriptionally in transgenic tobacco, requiring the correct 5′ terminus of the transcript and elements within the plastocyanin-coding region. The post-transcriptional light and chloroplast-controlled regulation of pea *PetE* has now been demonstrated to operate in transgenic *Arabidopsis* plants, indicating that the regulation is conserved in an additional plant species.

PetE constructs that examine the roles of the 5′ terminus of the transcript and of the coding region in the regulation have been generated. Transgenic tobacco and *Arabidopsis* plants containing these constructs have been produced and RNA-gel-blot analysis and luciferase assays have been carried out on the seedlings to examine the effects of light and plastid inhibitors on *PetE* expression. The results indicate that an element important in the light and chloroplast-controlled regulation is located in the first 12 % of the coding region, corresponding to the first 60 nucleotides and that this first portion of the coding region may need to be translated in order for the regulation to operate.