

Golden 2-like genes in Physcomitrella patens

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Two maize genes, *Golden 2* and *Golden 2-like (Glk)*, encode putative transcription factors that are thought to be involved in the regulation of chloroplast development. Two *Glk* genes have also been found in rice and *Arabidopsis*, all of which have a conserved DNA binding domain and C-terminal motif. *Glk* genes are included in the GARP gene family, together with *Arabidopsis* response regulators. In *Physcomitrella patens*, two *Glk* genes have been identified (*PpGlk1* and 2). Phylogenetic analysis suggests that these genes form a sister group to the rest of the *Glk* gene family, indicating that independent duplication events have occurred. Both *PpGlk* genes are expressed in the protonema and gametophore, and as in *Arabidopsis*, maize and rice, their expression levels increase on exposure to light. We are currently selecting mutations in both genes to assess whether the *Glk* gene function is conserved between lower plants and higher plants.