

### **P3: Functional Analysis of the *Physcomitrella patens mago nashi***

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Maternal effect alleles of the *Drosophila melanogaster mago nashi* gene have embryo patterning phenotypes caused by the mis-localisation of RNA species within the oocyte. These alleles also cause a disorganisation of the microtubule cytoskeleton, suggesting that *mago nashi* could be involved in a fundamental mechanism of *Drosophila* cell polarity establishment. The study of plant homologues of *mago nashi* might reveal some mechanisms of *plant cell polarity regulation*. An *Arabidopsis mago nashi EST* clone was used to isolate a *Physcomitrella patens mago nashi* cDNA from an aba-induced cDNA library. The probing of *Physcomitrella* genomic Southern blots suggested that the cDNA represents a single copy locus. The genomic *mago nashi* was cloned, and an *nptII* kanamycin-resistance gene was inserted into the genomic fragment, creating a plasmid to knockout the *mago nashi* locus. Protoplasts were transformed using linearised plasmid. A total of 87 stable transformants were recovered. 6 of 20 stable mutants analysed using PCR were identified as having integrations at the *mago nashi* locus. Preliminary phenotypic analysis has shown that some transformants exhibit a protonemal phenotype. Gamete development may also be affected.