

**S1 Table.** Primer sequences.

Primer	Sequence (5' → 3')	Primer binding site <sup>a</sup>
Linear knockout construct generation <sup>b</sup>		
5'F-ASCL-ClaI	GCACGG <u>ATCGATTAATGTTGGAAGTTGTGATTGGAAT</u>	-549...-522 <sup>c</sup>
5'R-ASCL-ClaI	GCACGG <u>ATCGATGCTCGTCCAAAATTTCTTTGTT</u>	422...446
3'F-ASCL-NdeI	GGAATTCC <u>CATATGCTACGGGGGCGCTTCT</u>	694...712
3'R-ASCL-NdeI	GGAATTCC <u>CATATGACACCAGGACCGAAGGCAA</u>	1430...1450
PCR analysis of stable transformants		
ASCL-gDNA-F	CTTACACATCACTCACTTATTCTGCTGCTT	-792...-763
ASCL-gDNA-R	GAGAATAATACGATCCCTCTCTCAGTTTGA	1661...1690
pTN182-5'-R	TTGAAAAGTGTC AATAGCCCTTTGG	-380...-356 <sup>d</sup>
pTN182-3'-F	ATTGGTATCAGGGCCATGAATAGGT	1416...1440
Southern blot analysis		
pTN-G418-F	GTGGAGAGGCTATTCGGCTATGACT	46...70
pTN-G418-R	AACTCGTCAAGAAGGCGATAGAAGG	764...788
RT-PCR		
ASCL-RT-F	AACGACCATGGCAAGTCGAAGGGTCGAGGCG	-7...24
ASCL-RT-R	ACGTGCTGCTGCTGATGTTCCCG	1314...1336
Actin3-F	ATGGCTGGAGAGGGTGAGGATGTCC	1...25 <sup>e</sup>
Actin3-R	CCACATCTGCTGGAACGTACTCAGCG	1236...1261

<sup>a</sup> Nucleotide numbering is in relation to the translation initiation codon, starting with number 1 at the A of the ATG.

<sup>b</sup> *PpASCL* locus-specific regions are underlined and restriction sites are highlighted.

<sup>c</sup> *PpASCL* gene sequence (locus name, Phpat.002G137300) is available in the Phytozome database ([phytozome.jgi.doe.gov/](http://phytozome.jgi.doe.gov/)).

<sup>d</sup> Gene accession number of pTN182 is AB267706. Nucleotide numbering of pTN182 based primers is in relation to the translation initiation codon of *nptII*.

<sup>e</sup> Gene accession number of *Physcomitrella Actin3* is AY382283.