

**Table S1. *ACL5* orthologs in the selected species**

Clade	Species	Gene	Code
Angiosperms	<i>Arabidopsis thaliana</i>	<i>AtACL5</i>	AT5G19530.1
Gymnosperms	<i>Picea abies</i>	<i>PaACL5.1</i>	PAB00026429
		<i>PaACL5.2</i>	PAB00036924
Lycophytes	<i>Selaginella lepidophylla</i>	<i>SlACL5.1</i>	onekp:ABIJ_scaffold_2009837
		<i>SlACL5.2</i>	onekp:ABIJ_scaffold_2009492
Bryophytes	<i>Physcomitrella patens</i>	<i>PpACL5.1</i>	Pp3c5_6270V3
		<i>PpACL5.2</i>	Pp3c6_27380V3
		<i>PpACL5.3</i>	Pp3c27_3260V3
Liverworts	<i>Marchantia polymorpha</i>	<i>MpACL5</i>	Mapoly0012s0100
Green algae	<i>Chlamydomonas reinhardtii</i>	<i>CrACL5</i>	Cre06.g251500

**Table S2. Oligos used for PCR amplification**

Gene	Forward	Reverse	cDNA product (bp)	gDNA product (bp)
<b><i>AtACL5</i></b>	AACATTCTCAAACCCAAGCTTAGC	ATGGTGTTGTAGATTGATGTGAAGACT	107	213
<b><i>PaACL5.1</i></b>	CCGCCTTGAGCTCGTTATCAAC	CTGGGTCTGCAAGGTCTCCTAC	92	160
<b><i>PpACL5.1</i></b>	CAGTGGCAGGAGGTCCTTGTTA	GGAGTAGACCTCTGTGTGCGTT	140	277
<b><i>MpACL5</i></b>	GTGAGAAAATCGTTGGCCCAGG	TTCGCATTGGTTCCATGTCC	83	–
<b><i>CrACL5</i></b>	TCACGCTCATCAACGACGAC	ACCACGTTGCGGTAAAACTC	145	291