
1 **Supplemental Tables**

2 **Supplemental Table 1.** Allelic test of *dpw2-1* and *dpw2-2*.

3 Segregation of F1 plants (sterile : fertile)

	♂ \ ♀	<i>dpw2-1</i>	<i>dpw2-2</i>
heterzygous <i>dpw2-1</i>			12:10
heterzygous <i>dpw2-2</i>		11:10	

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19 **Supplemental Table 2.** *In vitro* substrate specificities of recombinant DPW2
20 protein with different acyl acceptors.

21 Relative activities are presented as peak areas (mAU) or in percentage activity

22 with feruloyl-CoA and 16-hydroxy-hexadecanoic acid. n.d., Not detected

Acyl acceptor	peak area [mAU]	Activity(%)
15-hydroxy-pentadecanoic acid	15.63	79
16-hydroxy-hexadecanoic acid	19.7	100
17-hydroxy-heptadecanoic acid	10.92	55
20-hydroxy-eicosanoic acid	1.38	7
22-hydroxy-docosanoic acid	n.d.	
12-hydroxy-octadecanoic acid	n.d.	
methanol	1	
ethanol	n.d.	
1-propanol	n.d.	
2-propanol	n.d.	
1-butanol	n.d.	
1-hexanol	n.d.	
1-octanol	n.d.	
1-dodecanol	n.d.	
1-tetradecanol	n.d.	
1-hexadecanol	n.d.	
1-octadecanol	n.d.	
2-hexenol	n.d.	
dodecanedioic acid	n.d.	
hexadecanedioic acid	n.d.	
hexadecanoic acid methyl ester	n.d.	
hexadecane	n.d.	
lignoceric acid	n.d.	
coniferyl alcohol	n.d.	
sinapyl alcohol	n.d.	
shikimic acid	n.d.	
tyramine	n.d.	
tryptamine	n.d.	

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30 **Supplemental Table 3.** List of the primers used for *DPW2* mapping.

Markers	Forward primers	Reverse primers	Locus
OS116	5'GAGAAGCCAGCAATG TTATGA3'	5'TACCAAACCGTTTT GAGTAGG3'	AP003418
OS117	5'TTATGAGACTATGGCT TGTCGG3'	5'CCTTCCAATCACC ACTTCCT3'	AP003412
QXL117-1	5'GTTCTCTCTCCCCTTT CCTC3'	5'TAATTCCTCTGCTC CTCTCG3'	AP004223
LXCC15	5'CGAAGTCACAGTTTTC AAAC3'	5'TGCTGTTGGAACCT TGTGG3'	AP004223

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41 **Supplemental Table 4.** Primers used for *DPW2* vector construction.

Primer names	Sequence (restriction enzyme sites underlined)	Constructs
70025gDNAF	CCATGATTAC <u>GAATT</u> <u>C</u> TATTGCCTGTTTGT GGCTGGAC	DPW2 _{pro} :DPW2gDNA
70025gDNAR	ATTCGAGCTGGTCA <u>CCGCCGCTTACACG</u> TACTGTATTGG	DPW2 _{pro} :DPW2gDNA
70025Promoter-F	CCATGATTAC <u>GAATT</u> <u>C</u> AAAAGGCAAAGA AAAGGATGCG	DPW2 _{pro} :GUS
70025Promoter-R	CTCAGATCTAC <u>CATG</u> <u>G</u> TGTTGGATTGATCG ATCGGATCAG	DPW2 _{pro} :GUS
70025Promoter-F1	CCATGATTAC <u>GAATT</u> <u>C</u> TTCAGCGGACCAC ATGTGATGGTC	DPW2 _{pro} :DPW2CDS-GFP
70025Promoter-R1	ATTTACCCTC <u>AGATC</u> <u>I</u> TGTTGGATTGATCG ATCGGATCAG	DPW2 _{pro} :DPW2CDS-GFP
70025pA7-F	GCTCTAGACATGGG GCAAGAAGCCGCCG CCGCC	pA7-DPW2CDS-GFP
70025pA7-R	CGGGATCCTCAGAA GATCACCTCGTCCA CGAG	pA7-DPW2CDS-GFP
70025CDS-GFP-F	GAAGATCTGATGGG GCAAGAAGCCGCCG CCGCC	35S _{pro} :DPW2CDS-GFP
70025CDS-GFP-R	GGACTAGTGAAGAT CACCTCGTCCACGA GTCG	35S _{pro} :DPW2CDS-GFP
70025ORF-F	CGGGATCCATGGGG CAAGAAGCCGCCGC CGCC	pET28a-DPW2CDS
70025ORF-R	CGGAATTCTCAGAA GATCACCTCGTCCA CGAG	pET28a-DPW2CDS

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