

Supplementary Information

Table S1. List of 83 identified *SDH* homologous genes from 12 plant species. “N” means that the gene does not have the indicated domain; “Y” means that the gene has the indicated domain; “D” means that the gene has double copies of the indicated domains; and “I” means that the gene has an incomplete copy of the indicated domain.

Family Name	Species Name	No.	Transcript Name	PLN02702 Domain	COG1063 Domain
		1	<i>Pbr013912.1</i>	Y	N
		2	<i>Pbr013913.1</i>	Y	N
		3	<i>Pbr013914.1</i>	Y	N
		4	<i>Pbr013915.1</i>	Y	N
		5	<i>Pbr013916.1</i>	Y	N
		6	<i>Pbr013917.1</i>	Y	N
		7	<i>Pbr022043.1</i>	Y	N
	<i>Pyrus bretschneideri</i>	8	<i>Pbr032770.1</i>	I	N
		9	<i>Pbr032772.1</i>	Y	N
		10	<i>Pbr032773.1</i>	Y	N
		11	<i>Pbr032774.1</i>	Y	N
		12	<i>Pbr032775.1</i>	Y	N
		13	<i>Pbr032776.1</i>	Y	N
		14	<i>Pbr032777.1</i>	Y	N
		15	<i>Pbr032778.1</i>	Y	N
		16	<i>TCONS_00015561</i>	Y	Y
		17	<i>TCONS_00015562</i>	Y	Y
		18	<i>TCONS_00015564</i>	Y	Y
Rosaceae		19	<i>TCONS_00015565</i>	Y	Y
		20	<i>TCONS_00015566</i>	Y	Y
		21	<i>TCONS_00015567</i>	Y	Y
		22	<i>TCONS_00015568</i>	Y	Y
		23	<i>TCONS_00015569</i>	Y	Y
		24	<i>TCONS_00015570</i>	Y	Y
		25	<i>TCONS_00015571</i>	Y	Y
	<i>P. communis</i>	26	<i>TCONS_00020677</i>	Y	Y
		27	<i>TCONS_00020678</i>	Y	Y
		28	<i>TCONS_00020679</i>	Y	Y
		29	<i>TCONS_00020680</i>	Y	Y
		30	<i>TCONS_00020682</i>	Y	Y
		31	<i>TCONS_00020683</i>	Y	Y
		32	<i>TCONS_00020685</i>	Y	Y
		33	<i>TCONS_00034640</i>	Y	Y
		34	<i>TCONS_00034641</i>	I	N
		35	<i>TCONS_00034642</i>	Y	Y
		36	<i>TCONS_00034643</i>	Y	Y
		37	<i>TCONS_00039589</i>	Y	N

Table S1. Cont.

Family Name	Species Name	No.	Transcript Name	PLN02702 Domain	COG1063 Domain
		38	<i>PpySDH1</i>	Y	N
		39	<i>PpySDH2</i>	Y	N
		40	<i>PpySDH3</i>	Y	N
		41	<i>PpySDH4</i>	Y	N
		42	<i>PpySDH5</i>	Y	N
		43	<i>PpySDH6</i>	Y	N
	<i>P. pyrifolia</i>	44	<i>PpySDH8</i>	Y	N
		45	<i>PpySDH9</i>	Y	N
		46	<i>PpySDH10</i>	Y	N
		47	<i>PpySDH11</i>	Y	N
		48	<i>PpySDH12</i>	Y	N
		49	<i>PpySDH13</i>	Y	N
		50	<i>PpySDH14</i>	Y	N
		51	<i>PpySDH15</i>	Y	N
	<i>Fragaria vesca</i>	52	<i>mrna13340.1-v1.0-hybrid</i>	Y	N
		53	<i>MDP0000123910</i>	Y	N
		54	<i>MDP0000149907</i>	Y	N
		55	<i>MDP0000167088</i>	Y	N
Rosacea		56	<i>MDP0000171573</i>	Y	N
		57	<i>MDP0000188052</i>	Y	N
		58	<i>MDP0000188054</i>	Y	N
		59	<i>MDP0000250546</i>	Y	N
	<i>Malus domestica</i>	60	<i>MDP0000305455</i>	Y	N
		61	<i>MDP0000515106</i>	Y	N
		62	<i>MDP0000638442</i>	Y	N
		63	<i>MDP0000707567</i>	Y	N
		64	<i>MDP0000759646</i>	Y	N
		65	<i>MDP0000786110</i>	Y	N
		66	<i>MDP0000807470</i>	Y	N
		67	<i>MDP0000873573</i>	Y	N
		68	<i>MDP0000874667</i>	Y	N
		69	<i>XM_008236083.1 </i>	Y	N
	<i>Prunus mume</i>	70	<i>XM_008238108.1 </i>	Y	N
		71	<i>XM_008238138.1 </i>	Y	N
		72	<i>EMJ01124</i>	Y	N
	<i>P. persica</i>	73	<i>EMJ15002</i>	Y	N
		74	<i>EMJ19358</i>	Y	N
		75	<i>EMJ02279</i>	Y	N
Brassicaceae	<i>Arabidopsis</i>	76	<i>AT5G51970.1</i>	Y	N
	<i>thaliana</i>	77	<i>AT5G51970.2</i>	Y	N

Table S1. Cont.

Family Name	Species Name	No.	Transcript Name	PLN02702	COG1063
				Domain	Domain
Gramineae	<i>Zea mays</i>	78	<i>GRMZM2G175423_T01</i>	Y	N
		79	<i>GRMZM2G175423_T02</i>	Y	N
Rutaceae	<i>Citrus sinensis</i>	80	<i>Csi_CX674141</i>	Y	N
Solanaceae	<i>Solanum</i>	81	<i>Solyc01g006510.2.1</i>	Y	N
	<i>lycopersicum</i>				
Vitaceae	<i>Vitis vinifera</i>	82	<i>VIT_16s0100g00290.t01</i>	D	N
		83	<i>VIT_16s0100g00300.t01</i>	D	N

Table S2. Similarity of nucleotide sequences between *PpySDH* genes and corresponding genes in the Chinese white pear reference genome.

Gene Name	Corresponding Gene in Reference Genome	Score	E-Value	Identity (%)
<i>PpySDH1</i>	Pbr013912.1	2078	0.0	99
<i>PpySDH2</i>	Pbr013913.1	2023	0.0	99
<i>PpySDH3</i>	Pbr013914.1	1965	0.0	99
<i>PpySDH4</i>	Pbr013915.1	2006	0.0	99
<i>PpySDH5</i>	Pbr013916.1	1978	0.0	99
<i>PpySDH6</i>	Pbr013917.1	1591	0.0	93
<i>PpySDH8</i>	Pbr032771.1	2006	0.0	99
<i>PpySDH9</i>	Pbr032772.1	1290	0.0	94
<i>PpySDH10</i>	Pbr032773.1	1995	0.0	99
<i>PpySDH11</i>	Pbr032774.1	2039	0.0	99
<i>PpySDH12</i>	Pbr032775.1	2028	0.0	99
<i>PpySDH13</i>	Pbr032776.1	1467	0.0	91
<i>PpySDH14</i>	Pbr032777.1	1478	0.0	91
<i>PpySDH15</i>	Pbr032778.1	1701	0.0	95



Figure S1. Ripe fruit of “Cuiguan” and “Cuiyu” pears.

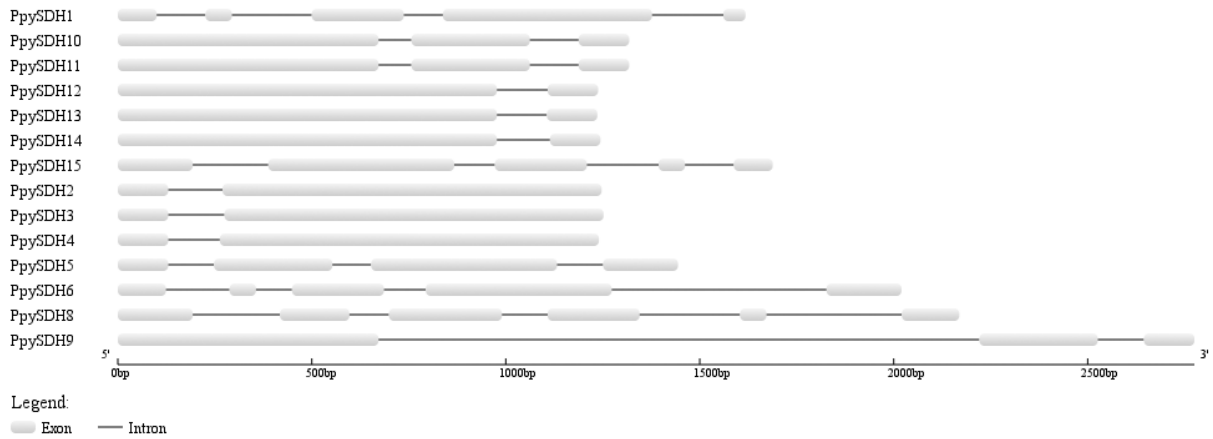


Figure S2. Structure analysis of *PpySDH* genes by using GSDS2.0 (<http://gsds.cbi.pku.edu.cn/>). The grey rectangles indicate the exons, and the lines indicate the introns.

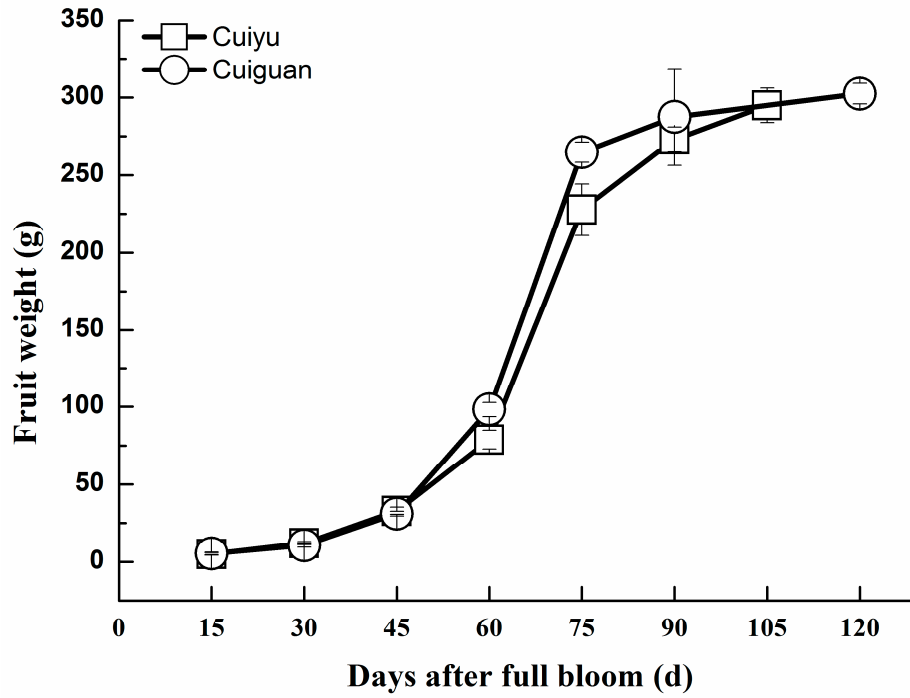


Figure S3. Seasonal changes in average fruit weight of two pear cultivars, “Cuiguan” (-○-) and “Cuiyu” (-□-). The period of “Cuiyu” from flowering to harvest is 105 days, which is 15 days earlier than “Cuiguan”. There is no significant difference in the fruit weight of two cultivars when ripened. Error bars indicate the standard error (SE) from ten biological replicates.