

**Table S4 Differentially expressed genes and lncRNAs in photosynthetic modules of *Populus tomentosa* and *Populus simonii*.**

Gene_id	Name	Log2FC	adjust P-value	Comparison	Function
<i>Potri.001G438700</i>	<i>PsiPSBR</i>	-2.70	1.95E-08	S vs. NW	photosystem II subunit R
<i>Potri.001G438700</i>	<i>PsiPSBR</i>	-2.29	1.36E-08	S vs. NE	photosystem II subunit R
<i>Potri.005G095900</i>	<i>PsiKUP1</i>	-2.15	3.32E-10	S vs. NW	Potassium ion transporter activity
<i>Potri.005G095900</i>	<i>PsiKUP1</i>	-2.26	9.33E-11	S vs. NE	Potassium ion transporter activity
<i>Potri.005G258600</i>	<i>PsiLHCB7</i>	-2.08	5.14E-54	S vs. NW	Chlorophyll A-B binding family protein
<i>Potri.005G258600</i>	<i>PsiLHCB7</i>	-2.99	9.05E-05	S vs. NE	Chlorophyll A-B binding family protein
<i>Potri.007G061400</i>	<i>PsiNIP2</i>	-1.36	6.63E-03	S vs. NW	NEP-interacting protein 2
<i>Potri.007G061400</i>	<i>PsiNIP2</i>	-1.27	1.03E-05	S vs. NE	NEP-interacting protein 2
Psi_XLOC_011671	Psi_XLOC_011671	-2.33	6.57E-03	S vs. NW	Target <i>Potri.007G061400</i>
Psi_XLOC_011671	Psi_XLOC_011671	-2.46	1.43E-03	S vs. NE	Target <i>Potri.007G061400</i>
Psi_XLOC_022416	Psi_XLOC_022416	-2.56	2.46E-02	S vs. NW	Target <i>Potri.005G258600</i> and <i>Potri.001G438700</i>
Psi_XLOC_022416	Psi_XLOC_022416	-2.80	1.32E-02	S vs. NE	Target <i>Potri.005G258600</i> and <i>Potri.001G438700</i>
Psi_XLOC_022701	Psi_XLOC_022701	-3.08	2.30E-05	S vs. NW	Target <i>Potri.005G095900</i>
Psi_XLOC_022701	Psi_XLOC_022701	-4.07	1.87E-18	S vs. NE	Target <i>Potri.005G095900</i>
Pto_XLOC_001831	Pto_XLOC_001831	-2.48	4.12E-07	S vs. NE	Target <i>Ptom.012G00615</i>
Pto_XLOC_010062	Pto_XLOC_010062	-5.95	2.21E-16	S vs. NE	Target <i>Ptom.012G00615</i>
Pto_XLOC_013503	Pto_XLOC_013503	-2.61	3.97E-17	S vs. NW	Target <i>Ptom.018G001293</i>
Pto_XLOC_013503	Pto_XLOC_013503	-2.02	3.92E-10	S vs. NE	Target <i>Ptom.018G001293</i>
Pto_XLOC_026190	Pto_XLOC_026190	-1.42	3.98E-05	S vs. NW	Target <i>Ptom.010.01955</i>
Pto_XLOC_026190	Pto_XLOC_026190	-4.71	3.81E-36	S vs. NE	Target <i>Ptom.010.01955</i>
<i>Ptom.010G.01955</i>	<i>PtoPPL1</i>	-1.24	7.40E-10	S vs. NW	PsbP-like protein 1
<i>Ptom.010G.01955</i>	<i>PtoPPL1</i>	-1.85	2.06E-12	S vs. NE	PsbP-like protein 1
<i>Ptom.010G.00307</i>	<i>PtoLHCA1</i>	-1.78	1.62E-05	S vs. NE	Photosystem I light harvesting complex gene 1
<i>Ptom.012G00615</i>	<i>PtoPnsB4</i>	-1.07	1.13E-07	S vs. NW	NDH dependent flow 6

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<i>Ptom.012G00615</i>	<i>PtoPnsB4</i>	-1.31	3.40E-08	S vs. NE	NDH dependent flow 6
<i>Ptom.018G01293</i>	<i>PtoMPH2</i>	-2.01	1.68E-09	S vs. NW	Chloroplast thylakoid lumen protein
<i>Ptom.018G01293</i>	<i>PtoMPH2</i>	-2.18	4.42E-10	S vs. NE	Chloroplast thylakoid lumen protein

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