

Additional file 9. Wak1-clade-specific amino acid motif helps to identify close homologs in *Platanus × acerifolia* (*Pac*). Amino acidic residues (shaded black) conserved among sequences of Wak1-headed clade of *Arabidopsis* (RLK/Pelle subfamily WAK-like) and of the II phylogenetic clade of Wak-like-L of *Pac* (refer to phylogeny of Figure 3). This motif suggests a genetic correlation between the two sequence groups.

WAK1 clade	WAK1.Arab.thal.Wak-like	TVYKGLLPDNS	432GTLFDHLH-G--SMIDS	--SL-TWEHRLK	510LHSSASIPIT	HRDIKTANI	540	
	WAK3.Arab.thal.Wak-like	TVYKGLLPDNT	438	GTLFDHLH-G--SIFDS	--SL-TWEHRLR	516	LHSSASIPIT	HRDIKTANI	546	
	WAKL16.Arab.thal.Wak-like	TVYKGLLPDNS	131	GSLFDHLH-G--SMFVS	--SL-TWEHRLE	209	LHSGASIPIT	HRDIKTANI	239	
	WAK5.Arab.thal.Wak-like	TVYKGLQDNS	431	GTLFDHLH-G--SMFDS	--SL-TWEHRLR	509	LHSYASIPIT	HRDVKTANI	539	
	WAK2.Arab.thal.Wak-like	TVYKGLLPDNS	427	GTLFDHLH-G--SLYDS	--SL-TWEHRLR	505	LHSSASIPIT	HRDIKTANI	535	
	WAK4.Arab.thal.Wak-like	TVYKGLLPDNS	433	GTLFDHLH-G--SMFDS	--SL-TWEHRLR	511	LHSSASIPIT	HRDIKTANI	541	
II clade	pac.W.VtA.109	TVYKGLLEDHR		GTLFHHIH-D--EGHVS	--SI-SWESRLR		LHSATSIPIT	HRDIKSTNI		
	pac.W.Ch.156	-----ILEDHR		GTLFHHIH-D--EGHVS	--SI-SWEIRLR		LHSATSTPTI	NRDIKSTNI		
	pac.W.ArA.6	TVYKGLADHR		GTLSHHHI-D--ESHIS	--SI-SWGCRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.ArA.11	TVYKGLADHR		GTLSHHHI-D--ESHIS	--SI-SWGCRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.ArA.3	TVYKGLADHR		GTLSHHHI-D--ESHIS	--SI-SWGCRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.Ch.164	-----IADHR		GTLHHHHI-D--ESHIS	--SI-SWGCRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.ArA.7	TVYKGLADHR		GTLFHHIH-D--EGHVS	--SI-SWGSRMR		LHSAASIPIT	HRDIKSTNI		
	pac.W.ArA.14	TVYKGLADHR		GTLFHHIH-D--EGHVS	--SI-SWEIRLR		LHSAVSTPTI	HRDIKSANI		
RFO1 clade	WAKL9.Arab.thal.Wak-like	TVYKGLVDGR	470	GNLFEHLH-D--EFDEN	--IMATWNI	549	LHSSASSPIY	HRDVKSTNI	579	
	WAKL10.Arab.thal.Wak-like	TVYKGLVDGR	456	GNLFEHLH-D--DSDDY	--TMTTWEVRLR	535	LHSAASSPIY	HRDIKSTNI	565	
	WAKL1.Arab.thal.Wak-like	TVYKGLVDGS	452	GDLFKRLH-D--ESDDY	--TM-TWEVRLR	530	MHSAASPTI	HRDIKSTNI	560	
	WAKL5.Arab.thal.Wak-like	TVYKGLVDGK	435	GDMFKRLH-D--ESDDY	--AM-TWEVRLR	513	MHSAASPTI	HRDIKSTNI	543	
	WAKL6.Arab.thal.Wak-like	TVYKGLAEGR	455	GDLFKRLH-EKSESN	--TM-TWEVRLR	535	MHSAASPTI	HRDIKSTNI	565	
	WAKL2.Arab.thal.Wak-like	TVYKGLVDGR	439	GDLCKRLH-D--ESDDY	--TM-TWEVRLH	517	LHSAASPTI	HRDIKSTNI	547	
	WAKL4.Arab.thal.Wak-like	TVYKGLVDGR	465	GDLCKRLH-D--ECDDY	--IM-TWEVRLH	543	LHSAASPTI	HRDIKSTNI	573	
	RFO1.WAKL22.Arab.thal.Wak-like	TVYKGLVDGR	444	GDLFKRLH-H--DSDDY	--TM-TWDVRLR	522	LHSAASPTI	HRDVKSTNI	552	
	WAKL8.Arab.thal.Wak-like	TVYKGLDGM	413	RNLFDHLH-N--PSEDF	--PM-SWEVRLC	491	LHSAASPTI	HRDVKSTNI	521	
	WAKL17.Arab.thal.Wak-like	TVYKGLVDGR	467	GNLFKHIHEE--EADDY	--TM-IWGMRLR	546	LHSAASPTI	HRDIKSTNI	576	
	WAKL18.Arab.thal.Wak-like	TVYKGLVDGR	476	GNLFKHIHEE--ESDDY	--TM-LWGMRLR	555	LHSAASPTI	HRDIKSTNI	585	
	WAKL11.Arab.thal.Wak-like	TVYKGLVDGR	474	GNLFQHLH-E--ESDDY	--TK-TWGMRLR	552	LHSAASPTI	HRDIKSTNI	582	
	WAKL13.Arab.thal.Wak-like	TVYKGLVDGR	477	GNLFQHLH-E--EFDY	--TA-LWGVMR	555	LHTAACSPIY	HRDIKSTNI	585	
I clade	pac.W.VtA.107	TVYKGLHCGR		GTLFYHHI-D--QSEEF	--PI-SWVNCLR		LHSAASPTI	HRDIKSTNI		
	pac.W.VtB.203	TVYKGLHCGR		GTLFHHIH-S--QTEDF	--LM-SWDNRLR		LHSSVSMPIY	HRDVKSTNI		
	pac.W.VtB.208	TVYKGLHCGR		GTLFHHIH-S--QTEDF	--LM-SWDNRLR		LHSSASPTI	HRDIKSTNI		
	pac.W.VtB.201	TVYKGLQDGR		GTLFYHHI-D--PTEEF	--VM-SWDNRLR		LHSAASPTI	HRDVKSTNI		
	pac.W.VtA.108	TVYKGLQDGR		GTLFYHHI-D--QSEEF	--PI-SWVNCLR		LHSAASPTI	HRDIKSTNI		
	pac.W.VtA.101	TVYKGLVDGM		GTLFHYIH-D--QSEEF	--PN-SWDNRLK		LHSAASPTI	HRDIKSSNI		
	pac.W.VtA.105	TVYKGLVDGM		GTLFHYIH-D--QSEEF	--PN-SWDNRLK		LHSAASPTI	HRDIKSSNI		
	pac.W.VtA.102	TVYKGLVDGT		GTLFHYIH-D--QSEEF	--PN-SWDNRLK		LHSAASPTI	HRDIKSSNI		
	pac.W.Ch.157	-----MLVDGT		GTLFHYIH-D--QSEEF	--PN-SWDNRLK		LHSAASPTI	HRDIKSSNI		
	pac.W.ArA.8	TVYKGLPDGR		GTLFYHHI-E--KSEEF	--LS-SWDNRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.VtA.113	TVYKGLVDGM		GTLFHHIH-E--KSEEF	--LS-SWDNRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.Ch.158	-----MLLDGR		GTLFHHIH-D--QSEEF	--QC-SWDNRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.Ch.160	-----MLLDGR		GTLFHHIH-D--QSEEF	--QC-SWDNRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.VtA.110	TVYKGLLDGR		GTLFHHIH-D--QSEEF	--QC-SWDNRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.ArA.9	TVYKGLPDGR		GTLFHHIH-V--QSEEF	--QC-SWDNRLR		LHSAASPTI	HRDIKSTNI		
	pac.W.VtB.209	TVYKGLVNGR		GTLFHHIH-D--QSEEF	--LS-SWDNRLR		LHSTASPTI	HRDIKSTNI		
	pac.W.Ch.152	-----MLGDGR		GTLFHHIH-D--QSEEF	--LS-SWDNRLR		LHSSASPTI	YHKDIKSTNI		
	pac.W.Ch.162	-----VLSGDR		GTLAHHIH-E--LGLRS	--SL-GWGDRLK		MHSCK---	HRDIKSTNI		
	III clade	WAKL15.Arab.thal.Wak-like	EVFKGNLDDGT	377	GTLFEHIYGGGGGGGLYDHL	--PLRRRLM	460	LHSSSPPIY	HRDVKSSNI	490
		WAKL20.Arab.thal.Wak-like	EVFKAVLEDGT	386	GTLFEHLH--GSSDR	TKWPL-TWRRRLQ	466	LHSAASPTI	HRDVKSSNI	496
IV clade	pac.W.ArB.305	TVYAGKLNVD		GTLSQLQ-R--EIST	---GL-PWMTRLT		LHSAINPTI	FHRDIKSSNI		
	pac.W.ArB.312	TVYAGKLNVD		GTLSQLQ-R--EIST	---GL-PWMTRLT		LHSAINPTI	FHRDIKSSNI		
	WAKL14.Arab.thal.Wak-like	TVYRGLQND	371	GTLSEHLQ-R--DRGS	---GL-PWTLRLT	448	LHSSMNPPIY	HRDIKSTNI	478	
	WAKL21.Arab.thal.Wak-like	TVYAGEFPNS	337	GTLYQHLQ-H--ERQ	QP--PL-SWQLRLA	415	LHSSVNPTI	HRDIKSSNI	445	