SUPPLEMENTARY DATA

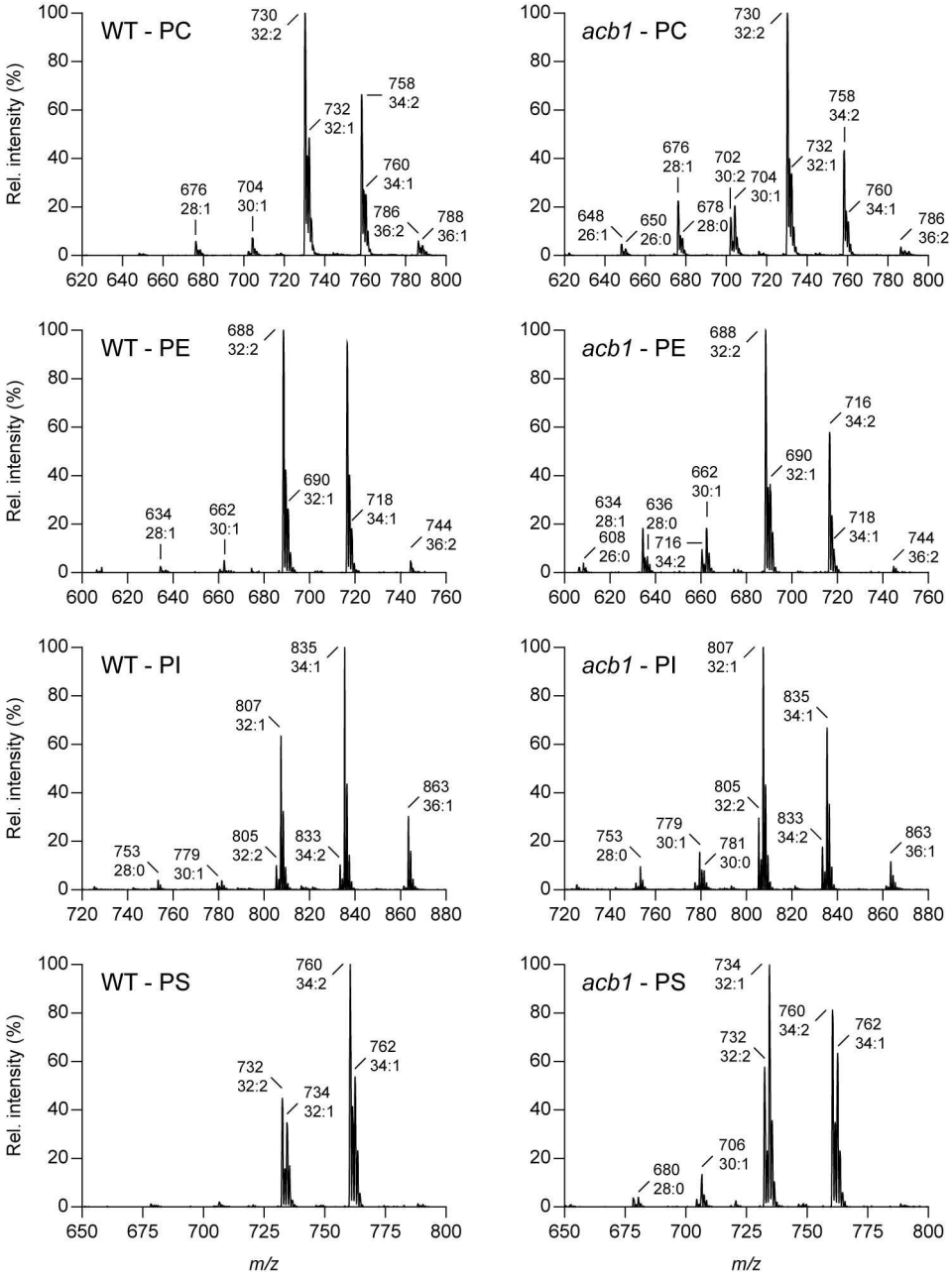

Figure S1 The effect of deleting the *ACB1* gene on the species profiles of phospholipids in yeast. Wild type (WT) and *acb1* cells were cultured in SL medium, harvested at late log-phase, and total lipid extracts were prepared. Phospholipid classes were separated by HPLC, and subjected to MS(/MS) to determine the species compositions of PC, PE, PI, and PS, as indicated in the respective panels. The major $[M+H]^+$ species of PC, PE and PS, as well as the major $[M-H]^-$ species of PI are indicated by their *m/z* values. The species labels indicate total acyl carbons:total acyl double bonds. In each panel, the intensity of the highest peak was set at 100 %. See Table S2 for the molecular species assignment per cluster.

Table S1 Relative abundance of fatty acids (mol%, ± SD, n = 4) in total lipid extracts of WT, *acb1*, *crd1* and *crd1acb1* strains grown in SL medium. Lipids were transesterified and the fatty acid methyl esters were quantified by gas chromatography.

Strain	Fatty acids						
	C12:0	C14:0	C14:1	C16:0	C16:1	C18:0	C18:1
WT	0.6 ± 0.2	1.2 ± 0.1	0.4 ± 0.0	17.1 ± 1.3	52.0 ± 1.4	5.0 ± 0.9	23.7 ± 1.6
acb1	2.0 ± 0.2	2.3 ± 0.9	2.5 ± 0.6	14.0 ± 1.2	58.5 ± 0.2	3.3 ± 0.3	17.6 ± 0.8
crd1	0.5 ± 0.2	1.1 ± 0.1	0.3 ± 0.0	17.0 ± 0.3	50.2 ± 2.6	5.3 ± 1.6	25.7 ± 1.2
crd1acb1	1.8 ± 0.4	2.5 ± 0.1	2.7 ± 0.1	12.7 ± 0.5	60.2 ± 1.4	2.6 ± 0.2	17.4 ± 0.7

Table S2 Molecular species assignment for PC, PE, PI, PS and PG per cluster with the theoretical *m/z* values indicated

Cluster	# double bonds	Possible acyl chain compositions[a]	*m/z* for indicated phospholipid class				
			PC	PE	PI	PS	PG[b]
C26	0	(16:0)(C10:0), (C14:0)(C12:0)	650	608	725	652	637
	1	(16:1)(C10:0), (C14:1)(C12:0)	648	606	723	650	635
C28	0	(C18:0)(C10:0), (C16:0)(C12:0), $(C14:0)_2$	678	636	753	680	665
	1	(C18:1)(C10:0), (C16:1)(C12:0), (C14:1)(C14:0)	676	634	751	678	663
	2	$(C14:1)_2$	674	632	749	676	661
C30	0	(C18:0)(C12:0), (C16:0)(C14:0)	706	664	781	708	693
	1	(C18:1)(C12:0), (C16:1)(C14:0), (C16:0)(C14:1)	704	662	779	706	691
	2	(C16:1)(C14:1)	702	660	777	704	689
C32	0	(C18:0)(C14:0), $(C16:0)_2$	734	692	809	736	721
	1	(C18:1)(C14:0), (C16:1)(C16:0), (C18:0)(C14:1)	732	690	807	734	719
	2	(C18:1)(C14:1), $(C16:1)_2$	730	688	805	732	717
C34	0	(C18:0)(C16:0)	762	720	837	764	749
	1	(C18:1)(C16:0), (C18:0)(C16:1)	760	718	835	762	747
	2	(C18:1)(C16:1)	758	716	833	760	745
C36	0	$(C18:0)_2$	790	748	865	792	777
	1	(C18:1)(C18:0)	788	746	863	790	775
	2	$(C18:1)_2$	786	744	861	788	773

[a] Only combinations of C10-C18 acyl chains are listed. Note: not all combinations are present in equal amounts, since some acyl chains are more abundant than others (see also Table S1). [b] For peak assignments in Figure 8A, the listed *m/z* values should be increased by 5 to account for the presence of d5-glycerol in labeled PG.

Table S3 MLCL and CL molecular species assignment per cluster with the theoretical *m/z* values indicated

Lipid	Cluster	Possible acyl chain compositions[a]	*m/z* for indicated # of double bonds				
			0	1	2	3	4
MLCL	C38	$(C18)(C10)_2$, $(C16)(C12)(C10)$, $(C14)_2(C10)$, $(C14)(C12)_2$	486	485	484	-	-
	C40	$(C18)(C12)(C10)$, $(C16)(C14)(C10)$, $(C16)(C12)_2$, $(C14)_2(C12)$	500	499	498	-	-
	C42	$(C18)(C14)(C10)$, $(C18)(C12)_2$, $(C16)_2(C10)$, $(C16)(C14)(C12)$, $(C14)_3$	514	513	512	511	-
	C44	$(C18)(C16)(C10)$, $(C18)(C14)(C12)$, $(C16)_2(C12)$, $(C16)(C14)_2$	528	527	526	525	-
	C46	$(C18)_2(C10)$, $(C18)(C16)(C12)$, $(C18)(C14)_2$, $(C16)_2(C14)$	542	541	540	539	-
	C48	$(C18)_2(C12)$, $(C18)(C16)(C14)$, $(C16)_3$	556	555	554	553	-
	C50	$(C18)_2(C14)$, $(C18)(C16)_2$	570	569	568	567	-
	C52	$(C18)_2(C16)$	584	583	582	581	-
	C54	$(C18)_3$	598	597	596	595	-
CL	C52	$(C18)(C14)(C10)_2$, $(C18)(C12)_2(C10)$, $(C16)_2(C10)_2$, $(C16)(C14)(C12)(C10)$, $(C16)(C12)_3$, $(C14)_3(C10)$, $(C14)_2(C12)_2$	591	590	589	588	-
	C54	$(C18)(C16)(C10)_2$, $(C18)(C14)(C12)(C10)$, $(C18)(C12)_3$, $(C16)_2(C12)(C10)$, $(C16)(C14)_2(C10)$, $(C16)(C14)(C12)_2$, $(14)_3(C12)$	605	604	603	602	-
	C56	$(C18)_2(C10)_2$, $(C18)(C16)(C12)(C10)$, $(C18)(C14)_2(C10)$, $(C18)(C14)(C12)_2$, $(C16)_2(C14)(C10)$, $(C16)_2(C12)_2$, $(C16)(C14)_2(C12)$, $(C14)_4$	619	618	617	616	615
	C58	$(C18)_2(C12)(C10)$, $(C18)(C16)(C14)(C10)$, $(C18)(C16)(C12)_2$, $(C18)(C14)_2(C12)$, $(C16)_3(C10)$, $(C16)_2(C14)(C12)$, $(C16)(C14)_3$	633	632	631	630	629
	C60	$(C18)_2(C14)(C10)$, $(C18)_2(C12)_2$, $(C18)(C16)_2(C10)$, $(C18)(C16)(C14)(C12)$, $(C18)(C14)_3$, $(C16)_3(C12)$, $(C16)_2(C14)_2$	647	646	645	644	643
	C62	$(C18)_2(C16)(C10)$, $(C18)_2(C14)(C12)$, $(C18)(C16)_2(C12)$, $(C18)(C16)(C14)_2$, $(C16)_3(C14)$	661	660	659	658	657
	C64	$(C18)_3(C10)$, $(C18)_2(C16)(C12)$, $(C18)_2(C14)_2$, $(C18)(C16)_2(C14)$, $(C16)_4$	675	674	673	672	671
	C66	$(C18)_3(C12)$, $(C18)_2(C16)(C14)$, $(C18)(C16)_3$	689	688	687	686	685
	C68	$(C18)_3(C14)$, $(C18)_2(C16)_2$	703	702	701	700	699
	C70	$(C18)_3(C16)$	717	716	715	714	713
	C72	$(C18)_4$	731	730	729	728	727

[a] Only compositions based on C10-C18 acyl chains are listed. Note: not all combinations are present in equal amounts, since some acyl chains are more abundant than others (see also Table S1).