

**Supplemental Table 1. Cysteines substitution mutants**

Clone	lane in Figure 6A	Protein	Activity <sup>1</sup>	Cysteines Position <sup>2</sup>												
				211	216	263	278	314	330	401	443	488	501	514	530	
	2	LPCAT1	+													
FK469	3	C <sup>211</sup> T	+	T												
FK621	Fig. S1	C <sup>211</sup> T C <sup>501</sup> A	+	T										A		
FK482	4	C <sup>211</sup> T C <sup>443</sup> A	+	T								A				
FK480	5		+	T				A				A				
FK481	6		+	T	A							A			A	
FK493	7	C <sup>211</sup> T C <sup>(216,314,443,501,514)</sup> A	+	T	A			A				A		A	A	
FK492	8		-	T	A	A						A		A	A	
FK495	9		-	T	A	A						A			A	
FK494	10		-	T	A	A		A				A		A	A	
FK605	11		-	T	A	A		A		A		A		A	A	
FK607	12		-	T	A	A		A	A			A		A	A	
FK606	13		-	T	A	A		A	A	A		A		A	A	
FK609	14		-	T	A	A		A	A	A		A		A	A	A
FK613	15		-	T	A	A	A	A	A	A		A			A	A
FK622	Fig. S1		-	T	A	A	A	A	A	A				A	A	A
FK614	16	Cys <sup>12-</sup>	-	T	A	A	A	A	A	A		A		A	A	A
FK623	Fig. S1		-		A	A	A	A	A	A		A		A	A	A

<sup>1</sup> Activity rates of the enzymes are shown in Figure 4, Figure 6 and Supp. Figure S1.

<sup>2</sup> Position of the 12 cysteines residues and substitution to a threonine (T) or an alanine (A) are indicated in the corresponding column.