



Figure S1. Molecular species of PI of Mel501 cells cultured in buffered (Mel501) and in acidic conditions (Mel501ac). Lipid extracts were analysed by LC/MS-MS. Data are expressed as pg of lipid species/ μ g of proteins. Mean values \pm S.D. (n = 6, Mel501; n=4, Mel501ac) are shown (*p<0.05, Mel501 vs Mel501ac; # lipid species exclusively found in Mel501ac). The inserted panels expand the vertical axis to allow comparison of low abundance lipid subclasses.

Symbol	Entry	Forward	Reverse
Palmitate elongation			
ELOVL1	NM_001256402.1	TGAAGCACGCAGTTCCTGAT	GGAGAAGAGGAAGAGCCAGG
ELOVL2	NM_017770.3	CGCTGCGGATCATGGAACAT	GTCCAACATGAACCACCCTCT
ELOVL3	NM_152310.2	ACCTCATTCCCCATAGCCCT	TGCCCCCAGGATACTGAAGA
ELOVL4	NM_022726.3	AGTTCTACCGCTGGACCTG	TGATCCCATGAATAACTCTCTGAA
ELOVL5	NM_021814.4	GCGCTTGATTTCATCCTTCGG	CCATTTGAAAACCTTTTAGCCCA
ELOVL6	NM_001130721.1	AAAGCACCCGAAGTAGGAGA	GCCCGCAAGGCATAGTAAGA
ELOVL7	NM_024930.2	AGATGCTGATCCAAGAGTTGAAG	TGAGTTCAAAGGGCTTGCGA
Desaturation			
SCD	NM_005063.4	TTCCCGACGTGGCTTTTTTCT	AGCCAGGTTTGTAGTACCTCC
SCD5	NM_001037582.2	ACTCTGCTCTGGGCTACTT	GAGTACTTGTGGTGGGCTCG
FADS1	NM_013402.4	CAGCTATGGCCCCGAC	ACAAAGGGATCCGTGGCAT
FADS2	NM_004265.3	CAGTCGGCAGGCAGCAT	GGAAGGCATCCGTTCATCT
FADS3	NM_021727.4	AGGACTCGTGCGTGCAG	GAAGGCATCCGTGGCGT
Conjugation of long acyl chain fatty acids to acyl CoA			
ACSL1	NM_001286710.1	GAGCTTTTGCAGCACTCACC	ACAAGGGCCATTATTTGACACC
ACSL3	NM_004457	ATTGTGCATACCATGGCTGCAGTG	TCTGGAATCCTTTCTGCCATCCCA
ACSL4	NM_004458	TGGGCATTCTCCAAGTAGACCAA	ACTGGCCTGTCATTCCAGCTATCA
ACSL5	NM_016234	TCAGTCATCACATTCTTCCGGGCA	CCAGCTTCACGTAATTGCAAGCCA
ACSL6	NM_015256	AGCTGGCCTGCTACACATATTCCA	TCCACATGCTCTAGCAGAAGCACA
Lysophospholipid acetyl transferases			
LPCAT1/ AGPAT9	NM_024830	GGCGGAACCCCTTCGTG	CACAACCTTCTCCACAGGG
LPCAT2/ AGPAT1 1	NM_017839	AGTATGTGATTGGCCTGGCTGTCT	TCCAAGGGAAGCCTGTAGAATGGT
LPCAT3/ MBOAT5	NM_005768	AACAGACCATCCACTGGCTCTTCA	TCAGGAAGAAGATGTGGCCAAGGA
LPCAT4/ MBOAT2	NM_001321266.1	TTTGCATGGACGCTAGCTGA	GTTGGACTGAAGGAGGTTTCGT
LPEAT2/ LPCAT4	NM_153613	GTAGGGAGCTTACCTGTGATTGT	CCACATAGCCAGCGGACA
LPEAT1/ MBOAT1	NM_001080480.2	CAACCACCCAAGAGCACCC	ACCACAAAATTACCTGGTCC
LPIAT1/ MBOAT7	NM_024298.4	GTGGGAATCATGACAGGCC	GGATCATGTAGAAGAGGCGGG
LPAAT1/ AGPAT1	NM_006411.3	CCCACCATTCTACCGCTAT	ATCCATTCTGGCCACCTCAG
LPAAT2/ AGPAT2	NM_001012727	CCCGTGGCCTCATCATGTA	CGATGGGCACGTTCTCCC
LPAAT3/ AGPAT3	NM_001037553.1	TTGTCTTCGTGGTGGTGGT	ATGACCAGTTGGCTCCAGAGT
LPAAT4/ AGPAT4	NM_020133.2	ATGCACCATCTTACGGACC	GACCTTGGAGCCCCCTAACA
LPAAT5/ AGPAT5	NM_018361.3	TTGCTCAGCATGGAGGAATCT	TGCCTGACTAGCTGAAAGGAC

Table S1. Primers used for qRT-PCR. The symbols used in the main text are indicated in bold.