Supplementary information

Table S-1. Sequences of the qPCR primers.

Table S-2. Identities of LPCs in mice. The relative abundance of LPCs were decreased in TAA-induced mice whereas recovered by NME.

Table S-3. Identities of acylcarnitines in mice. The relative abundance of acylcarnitines were increased in TAA-induced mice whereas recovered by NME.

Figure. S-1. NME recovered the lysophosphatidylcholines (A) and acylcarnitines (B) metabolism in mouse liver of TAA-induced toxicity. ***p* < 0.05 as compared to control group, ****p* < 0.01 as compared to control group, *****p* < 0.001 as compared to control group, $^{\#}p$ < 0.05 as compared to TAA treated group, $^{\#\#}p$ < 0.01 as compared to TAA treated group, $^{\#\#\#}p$ < 0.001 as compared to TAA treated group.

Figure. S-2. Tandem MS spectrum of authentic compounds. (A) 18:0-LPC. (B) 18:1-LPC. (C) 16:0-carnitine. (D) 18:0-carnitine.

Figure. S-3. (A) Hydrogen peroxide (H_2O_2) content in plasma. (B) Relative GSH abundance in plasma. H_2O_2 content and the relative GSH abundance were slightly recovered by NME without significant difference. ***p* < 0.05 as compared to control group.

Table S-1. Sequences of the qPCR primers.

Gene	Forward (5′ to 3′)	Reverse (5′ to 3′)
Actb	TGTTACCAACTGGGACGACA	CTGGGTCATCTTTTCACGGT
Nrf2	TTGGCAGGAGCTATTTTCC	GAACAGCGGTAGTATCAGC
Sod	ATGAAAGCGGTGTGCGTG	TGCTGGCCTTCAGTTAATCC
Nqo1	TTTCTGTGGCTTCCAGGTCT	CATCCTTCCAGGATCTGCAT
Gclc	GGCGATGTTCTTGAGACTCTGC	TTCCTTCGATCATGTAACTCCCATA
Gclm	GCCACCAGATTTGACTGCCTTT	CAGGGATGCTTTCTTGAAGAGCTT
Gsta2	TTATGTCCCCCAGACCAAAG	CCTGTTGCCCACAAGGTAGT
Gsta4	AGACCACGGAGAGGCT	CCTGACCACCTCAACATAGGG
Gstm3	CCCCAACTTTGACCGAAGC	GGTGTCCATAACTTGGTTCTCCA
Gpx1	TGGACTGGTGGTGCTCG	CGTCACTGGGTGTTGGC
Gpx2	GGGCTGTGCTGATTGAGA	CGGACATACTTGAGGCTGTT
Gpx3	GGCTTCCCTTCCAACC	AATTTCTGCTCTTTCTCCC
Cox2	TGACCCCCAAGGCTCAAATAT	TGAACCCAGGTCCTCGCTTA
Inos	GCAAACCCAAGGTCTACGTTCA	GAGCACGCTGAGTACCTCATTG
Tnfα	CCACCACGCTCTTCTGTCTAC	AGGGTCTGGGCCATAGAACT
Il6	TGATGCACTTGCAGAAAACA	ACCAGAGGAAATTTTCAATAGGC
Enpp2	TCGAGGGCGAGAGAAGTTTA	AAAAGAATGTCCCGGCTCTC
Lypla1	CCTTCACGGATTGGGAGATA	GGGGCATGTGGACAGATGTA
Lpcat1	CACGAGCTGCGACTGAGC	ATGAAAGCAGCGAACAGGAG
Lpcat2	ACCTGTTTCCGATGTCCTGA	CCAGGCCGATCACATACTCT
Lpcat3	AGCCTTAACAAGTTGGCGAC	ATGCCGGTAAAACAGAGCC
Lpcat4	GAGTTACACCTCTCCGGCCT	GGCCAGAGGAGAAAGAGGAC
Pcyt1a	AGCCCTATGTCAGGGTGACT	GGCATGACCAGAGTGAAACA
Pcyt1b	ATAGAGCACACATGCCCACA	GGCAACGGTCAGTTTTTCAT
Chka	AAAGTGCTCTTGCGGCTCTA	GACCTCTCTGCAAGAATGGC
Chkb	GCAGAGGTTCAGAAGGGTGA	CCCCAGAAAAAGTGAGATGC
Ppara	CCCAAGGGAGGAATAGCTTCT	CTCTGCGATGCGGTTCCAA
Cpt1b	TCTTCACTGAGTTCCGATGGG	ACGCCAGAGATGCCTTTTCC
Cpt2	CAGCACAGCATCGTACCCA	TCCCAATGCCGTTCTCAAAAT
Acot1	ATGGCAGCAGCTCCAGACTT	CCCAACCTCCAAACCATCAT
Acox1	CCGCCACCTTCAATCCAGAG	CAAGTTCTCGATTTCTCGACGG
Cyp4a10	CCAGGAACTGCATTGGGAAA	GACCCTGGTAGGATCTGGCA
Tgfb	GGAGAGCCCTGGATACCAAC	CAACCCAGGTCCTTCCTAAA

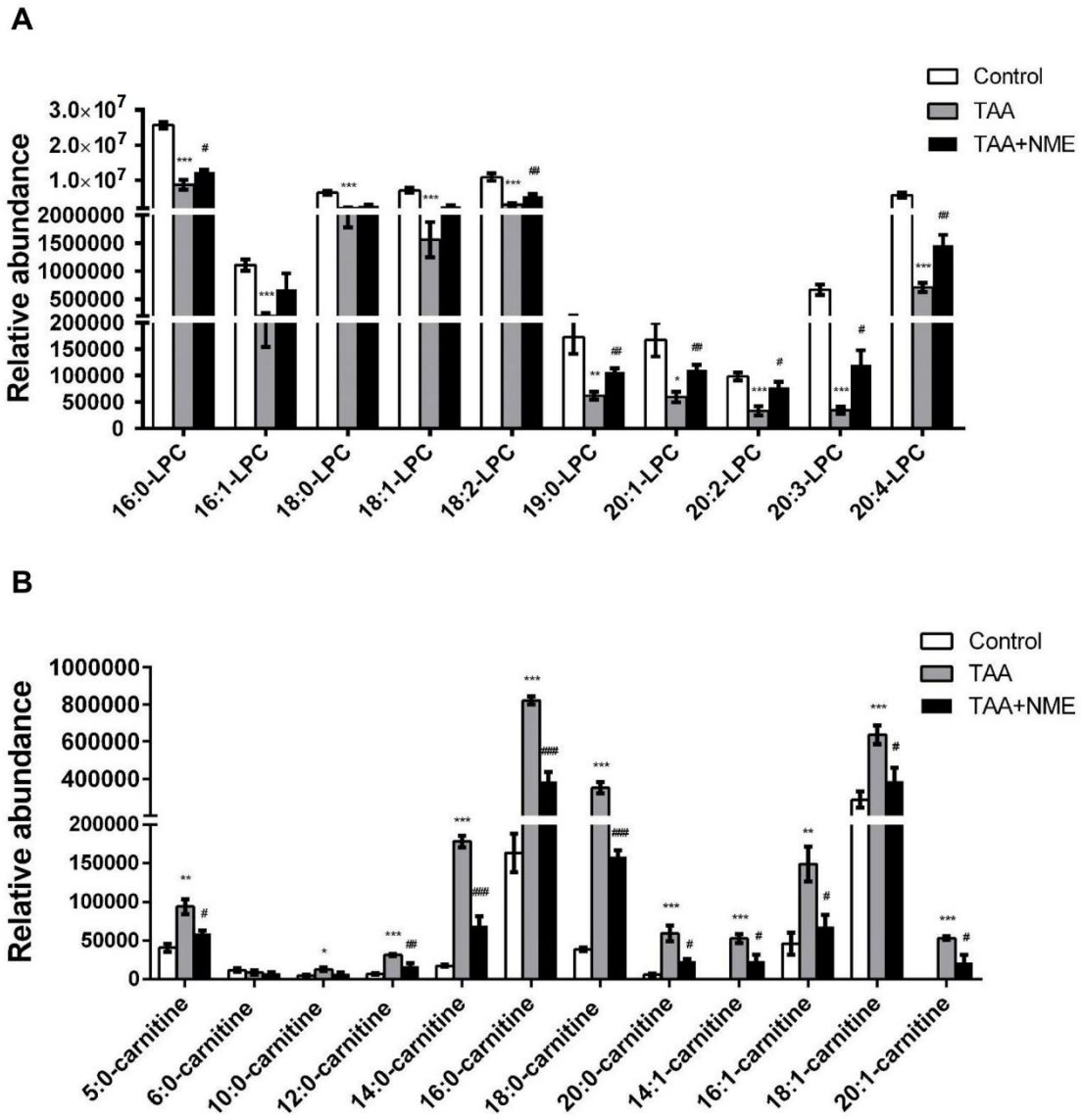
Table S-2. Identities of LPCs in mice. The relative abundance of LPCs were decreased in TAA-induced mice whereas recovered by NME.

No.	Observed *m/z*	Rt (min)	Putative ion form	Formula	Mass error (ppm)	Identification
1	496.3395	10.79	[M+H]	$C_{24}H_{50}NO_7P$	-0.35	16:0-LPC
2	494.3248	9.92	[M+H]	$C_{24}H_{48}NO_7P$	1.46	16:1-LPC
3	510.3552	11.44	[M+H]	$C_{25}H_{52}NO_7P$	-0.34	17:0-LPC
4	524.3713	12.13	[M+H]	$C_{26}H_{54}NO_7P$	0.48	18:0-LPC
5	522.3568	11.13	[M+H]	$C_{26}H_{52}NO_7P$	2.68	18:1-LPC
6	520.3403	10.33	[M+H]	$C_{26}H_{50}NO_7P$	1.06	18:2-LPC
7	538.3885	12.87	[M+H]	$C_{27}H_{56}NO_7P$	3.37	19:0-LPC
8	550.3875	12.40	[M+H]	$C_{28}H_{56}NO_7P$	1.50	20:1-LPC
9	548.3711	11.48	[M+H]	$C_{28}H_{54}NO_7P$	0.10	20:2-LPC
10	546.3554	10.80	[M+H]	$C_{28}H_{52}NO_7P$	0.04	20:3-LPC
11	544.3395	10.36	[M+H]	$C_{28}H_{50}NO_7P$	-0.45	20:4-LPC

Table S-3. Identities of acylcarnitines in mice. The relative abundance of acylcarnitines were increased in TAA-induced mice whereas recovered by NME.

No.	Observed *m/z*	Rt (min)	Putative ion form	Formula	Mass error (ppm)	Identification
1	246.1695	4.04	[M+H]	$C_{12}H_{23}NO_4$	-1.53	5:0-carnitine
2	260.1854	4.97	[M+H]	$C_{13}H_{25}NO_4$	-0.68	6:0-carnitine
3	288.2173	6.26	[M+H]	$C_{15}H_{29}NO_4$	1.47	8:0-carnitine
4	316.2482	7.31	[M+H]	$C_{17}H_{33}NO_4$	0.08	10:0-carnitine
5	344.2803	8.26	[M+H]	$C_{19}H_{37}NO_4$	2.39	12:0-carnitine
6	372.3109	9.18	[M+H]	$C_{21}H_{41}NO_4$	0.33	14:0-carnitine
7	400.3421	10.10	[M+H]	$C_{23}H_{45}NO_4$	0.06	16:0-carnitine
8	428.3755	10.98	[M+H]	$C_{25}H_{49}NO_4$	4.96	18:0-carnitine
9	456.4051	12.02	[M+H]	$C_{27}H_{53}NO_4$	1.10	20:0-carnitine
10	370.2977	8.70	[M+H]	$C_{21}H_{39}NO_4$	7.09	14:1-carnitine
11	398.3269	9.48	[M+H]	$C_{23}H_{43}NO_4$	1.32	16:1-carnitine
12	426.3578	10.31	[M+H]	$C_{25}H_{47}NO_4$	0.29	18:1-carnitine
13	454.3901	11.12	[M+H]	$C_{27}H_{51}NO_4$	2.25	20:1-carnitine

Figure. S-1. NME recovered the lysophosphatidylcholines (A) and acylcarnitines (B) metabolism in mouse liver of TAA-induced toxicity. *****p < 0.05 as compared to control group, ******p < 0.01 as compared to control group, *******p < 0.001 as compared to control group, $^{\#}p$ < 0.05 as compared to TAA-treated group, $^{\#\#}p$ < 0.01 as compared to TAA-treated group, $^{\#\#\#}p$ < 0.001 as compared to TAA-treated group.



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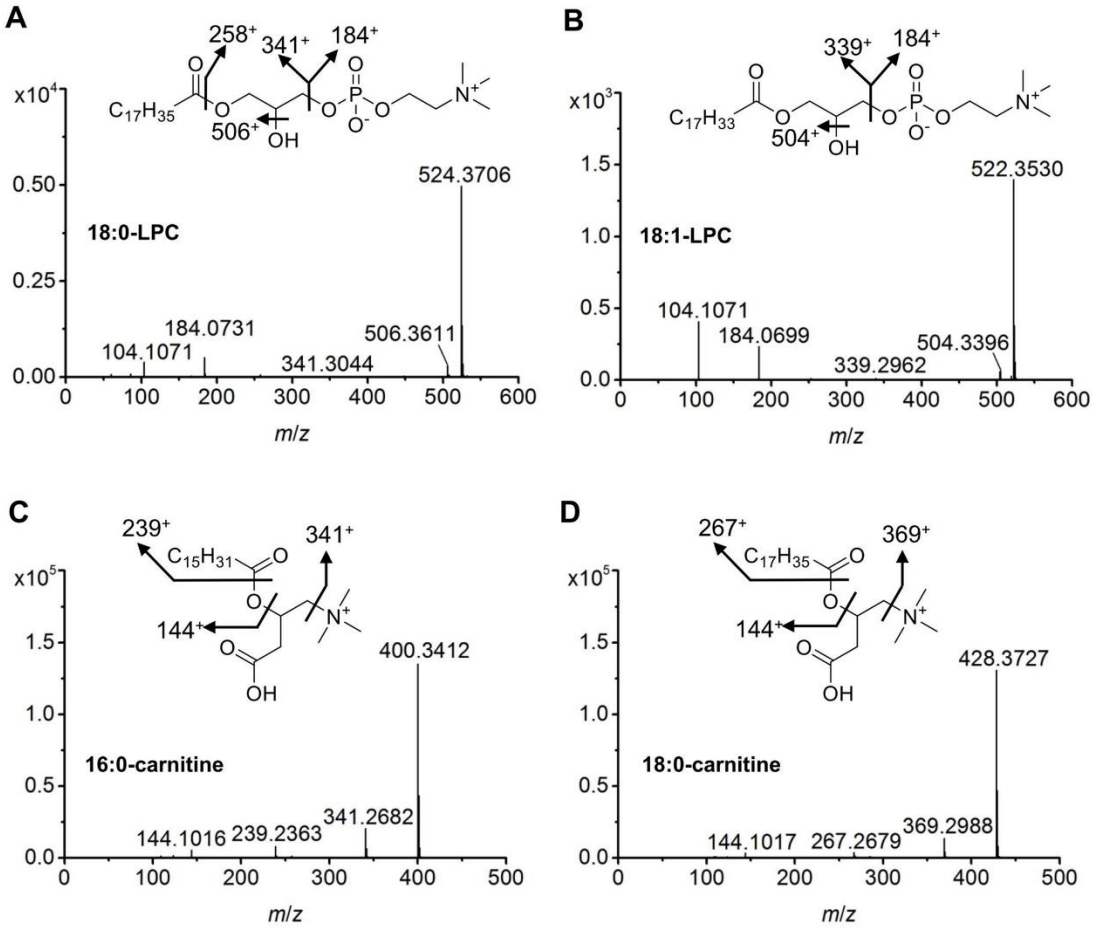

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