

SUPPLEMENTARY INFORMATION FOR

Serum lipidomic determinants of human diabetic neuropathy in type 2 diabetes

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Supplementary

Table S1. Identified lipids by adduct, mass-to charge ration (m/z), and retention time (RT) in positive and negative modes

The mass accuracy was ± 0.001 Da in positive mode and ± 0.005 Da in negative mode, with overall mass error of less than 2 parts per million. CE, cholesterol ester; DAG, diacylglycerol; LPC, lysophosphatidylcholine; LPE, lysophosphatidylethanolamine; MAG, monoacylglycerol; PA, phosphatidic acid; PC, phosphatidylcholine; PE, phosphatidylethanolamine; pPC, plasmenyl-phosphatidylcholine; pPE, plasmenyl-phosphatidylethanolamine; SM, sphingomyelin; TAG, triacylglycerol; FFA, free fatty acid; CerP, ceramide-phosphate; CL, cardiolipin; PG, phosphatidylglycerol; PI, phosphatidylinositol; PS, phosphatidylserine.

| Lipids in Positive Mode | | | | |
|-------------------------|---------------|----------------|----------|--------|
| Class | Compound name | Type of adduct | m/z | RT/min |
| CE | CE(16:0) | [M+NH4] | 642.6189 | 10.92 |
| | CE(16:1) | [M+NH4] | 640.6032 | 10.65 |
| | CE(17:0) | [M+NH4] | 656.6345 | 11.11 |
| | CE(18:0) | [M+NH4] | 670.6502 | 11.28 |
| | CE(18:1) | [M+NH4] | 668.6345 | 10.89 |
| | CE(18:2) | [M+NH4] | 666.6189 | 10.72 |
| | CE(18:3) | [M+NH4] | 664.6032 | 10.48 |
| | CE(20:3) | [M+NH4] | 692.6345 | 10.74 |
| | CE(20:4) | [M+NH4] | 690.6189 | 10.52 |
| | CE(20:5) | [M+NH4] | 688.6032 | 10.37 |
| | CE(22:4) | [M+NH4] | 718.6502 | 10.82 |
| | CE(22:5) | [M+NH4] | 716.6345 | 10.64 |
| | CE(22:6) | [M+NH4] | 714.6189 | 10.48 |
| DAG | DAG 26:0 | [M+NH4] | 502.4469 | 6.16 |
| | DAG 30:0 | [M+NH4] | 558.5094 | 7.38 |
| | DAG 30:1 | [M+NH4] | 556.4938 | 6.89 |
| | DAG 31:0 | [M+NH4] | 572.5251 | 7.69 |
| | DAG 32:0 | [M+NH4] | 586.5407 | 7.9 |
| | DAG 32:1 | [M+NH4] | 584.5251 | 7.48 |
| | DAG 32:2 | [M+NH4] | 582.5094 | 7.03 |
| | DAG 33:0 | [M+NH4] | 600.5564 | 8.12 |
| | DAG 33:1 | [M+NH4] | 598.5407 | 7.76 |

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|-----|----------|---------|----------|------|
| | DAG 34:0 | [M+NH4] | 614.572 | 8.4 |
| | DAG 34:1 | [M+NH4] | 612.5564 | 7.96 |
| | DAG 34:2 | [M+NH4] | 610.5407 | 7.58 |
| | DAG 34:3 | [M+NH4] | 608.5251 | 7.19 |
| | DAG 35:1 | [M+NH4] | 626.572 | 8.2 |
| | DAG 35:2 | [M+NH4] | 624.5564 | 7.83 |
| | DAG 36:0 | [M+NH4] | 642.6033 | 8.86 |
| | DAG 36:1 | [M+NH4] | 640.5877 | 8.47 |
| | DAG 36:2 | [M+NH4] | 638.572 | 8.07 |
| | DAG 36:3 | [M+NH4] | 636.5564 | 7.68 |
| | DAG 36:4 | [M+NH4] | 634.5407 | 7.33 |
| | DAG 36:5 | [M+NH4] | 632.5251 | 6.94 |
| | DAG 38:1 | [M+NH4] | 668.6189 | 8.93 |
| | DAG 38:2 | [M+NH4] | 666.6033 | 8.52 |
| | DAG 38:4 | [M+NH4] | 662.572 | 7.9 |
| | DAG 38:5 | [M+NH4] | 660.5564 | 7.61 |
| | DAG 38:6 | [M+NH4] | 658.5407 | 7.25 |
| | DAG 38:7 | [M+NH4] | 656.5251 | 6.89 |
| | DAG 40:6 | [M+NH4] | 686.572 | 7.68 |
| | DAG 40:7 | [M+NH4] | 684.5564 | 7.52 |
| LPC | LPC 14:0 | [M+H] | 468.309 | 1.1 |
| | LPC 14:0 | [M+Na] | 490.291 | 1.16 |
| | LPC 15:0 | [M+H] | 482.3246 | 1.36 |
| | LPC 15:0 | [M+Na] | 504.3066 | 1.37 |
| | LPC 16:0 | [M+H] | 496.3403 | 1.62 |
| | LPC 16:0 | [M+Na] | 504.343 | 2.11 |
| | LPC 16:1 | [M+H] | 494.3246 | 1.33 |
| | LPC 16:1 | [M+Na] | 516.3066 | 1.25 |
| | LPC 17:0 | [M+H] | 510.356 | 2.05 |
| | LPC 17:0 | [M+Na] | 532.3379 | 2.01 |
| | LPC 17:1 | [M+H] | 508.3403 | 1.49 |
| | LPC 18:0 | [M+H] | 524.3716 | 2.49 |
| | LPC 18:0 | [M+Na] | 546.3535 | 2.38 |

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|-----|----------|---------|----------|------|
| | LPC 18:1 | [M+Na] | 544.3379 | 1.69 |
| | LPC 18:2 | [M+H] | 520.3403 | 1.6 |
| | LPC 18:2 | [M+Na] | 542.3223 | 1.43 |
| | LPC 18:3 | [M+H] | 518.3246 | 1.12 |
| | LPC 18:3 | [M+Na] | 540.3066 | 1.15 |
| | LPC 19:0 | [M+H] | 538.3873 | 2.96 |
| | LPC 20:0 | [M+H] | 552.4029 | 3.44 |
| | LPC 20:1 | [M+H] | 550.3873 | 2.64 |
| | LPC 20:1 | [M+Na] | 572.3692 | 2.62 |
| | LPC 20:2 | [M+H] | 548.3716 | 2 |
| | LPC 20:3 | [M+H] | 546.356 | 1.61 |
| | LPC 20:3 | [M+Na] | 568.3379 | 1.6 |
| | LPC 20:4 | [M+H] | 544.3403 | 1.45 |
| | LPC 20:4 | [M+Na] | 566.3223 | 1.34 |
| | LPC 20:5 | [M+H] | 542.3246 | 1.08 |
| | LPC 22:4 | [M+H] | 572.3716 | 1.86 |
| | LPC 22:4 | [M+Na] | 594.3535 | 1.88 |
| | LPC 22:5 | [M+H] | 570.356 | 1.51 |
| | LPC 22:6 | [M+H] | 568.3403 | 1.3 |
| | LPC 24:0 | [M+H] | 608.4655 | 5.3 |
| LPE | LPE 16:0 | [M+H] | 454.2934 | 1.69 |
| | LPE 18:0 | [M+H] | 482.3246 | 2.48 |
| | LPE 18:0 | [M+Na] | 504.3066 | 2.62 |
| | LPE 18:1 | [M+H] | 480.309 | 1.87 |
| | LPE 18:2 | [M+H] | 478.2934 | 1.4 |
| | LPE 20:4 | [M+H] | 502.2934 | 1.34 |
| | LPE 22:6 | [M+H] | 526.2933 | 1.29 |
| MAG | MAG 17:0 | [M+Li] | 351.3087 | 3.19 |
| | MAG 18:1 | [M+NH4] | 374.327 | 2.9 |
| PA | PA 34:0 | [M+Na] | 699.4941 | 8.37 |
| PC | PC 30:0 | [M+Na] | 728.5206 | 6.07 |
| | PC 30:1 | [M+Na] | 726.505 | 5.54 |
| | PC 32:0 | [M+Na] | 756.5519 | 6.75 |

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| | PC 32:1 | [M+Na] | 754.5363 | 6.23 |
| | PC 32:2 | [M+Na] | 752.5206 | 5.75 |
| | PC 32:3 | [M+H] | 728.523 | 5.37 |
| | PC 33:2 | [M+Na] | 766.5363 | 6.09 |
| | PC 34:0 | [M+Na] | 784.5832 | 7.43 |
| | PC 34:2 | [M+Na] | 780.5519 | 6.42 |
| | PC 34:3 | [M+H] | 756.5543 | 6.78 |
| | PC 34:3 | [M+Na] | 778.5363 | 5.93 |
| | PC 34:4 | [M+Na] | 776.5206 | 5.68 |
| | PC 36:1 | [M+Na] | 810.5989 | 7.57 |
| | PC 36:2 | [M+Na] | 808.5832 | 7.16 |
| | PC 36:3 | [M+H] | 784.5856 | 7.45 |
| | PC 36:4 | [M+H] | 782.57 | 7.86 |
| | PC 36:4 | [M+Na] | 804.5519 | 6.08 |
| | PC 36:5 | [M+H] | 780.5543 | 5.6 |
| | PC 36:5 | [M+Na] | 802.5363 | 5.73 |
| | PC 36:6 | [M+H] | 778.5387 | 5.89 |
| | PC 38:4 | [M+H] | 810.6013 | 7.56 |
| | PC 38:4 | [M+Na] | 832.5832 | 7.02 |
| | PC 38:5 | [M+H] | 808.5856 | 5.09 |
| | PC 38:6 | [M+H] | 806.57 | 6.03 |
| | PC 38:6 | [M+Na] | 828.5519 | 5.44 |
| | PC 38:6 | [M+Na] | 828.5519 | 6.14 |
| | PC 38:8 | [M+H] | 802.5387 | 5.86 |
| | PC 40:10 | [M+H] | 826.5387 | 5.62 |
| | PC 40:4 | [M+Na] | 860.6145 | 7.55 |
| | PC 40:9 | [M+H] | 828.5543 | 6.09 |
| | PC 42:10 | [M+H] | 854.57 | 5.83 |
| PE | PE 32:1 | [M+H] | 690.5074 | 6.27 |
| | PE 34:0 | [M+H] | 720.5543 | 7.38 |
| | PE 34:1 | [M+H] | 718.5387 | 6.9 |
| | PE 34:2 | [M+H] | 716.523 | 6.46 |
| | PE 35:2 | [M+H] | 730.5387 | 6.79 |

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| | PE 36:0 | [M+H] | 748.5856 | 7.91 |
| | PE 36:1 | [M+H] | 746.57 | 7.5 |
| | PE 36:2 | [M+H] | 744.5543 | 7.01 |
| | PE 36:2 | [M+H] | 744.5543 | 7.12 |
| | PE 36:3 | [M+H] | 742.5387 | 6.59 |
| | PE 36:4 | [M+H] | 740.523 | 6.4 |
| | PE 36:5 | [M+H] | 738.5074 | 5.88 |
| | PE 38:3 | [M+H] | 770.57 | 7.28 |
| | PE 38:4 | [M+H] | 768.5543 | 7.04 |
| | PE 38:5 | [M+H] | 766.5387 | 6.54 |
| | PE 40:6 | [M+H] | 792.5543 | 6.94 |
| pPC | pPC 18:0 | [M+Na] | 544.3379 | 1.89 |
| pPE | pPE 34:1 | [M+H] | 702.5438 | 7.22 |
| | pPE 34:2 | [M+H] | 700.5281 | 6.75 |
| | pPE 34:2 | [M+H] | 700.5281 | 6.82 |
| | pPE 36:1 | [M+H] | 730.5751 | 7.8 |
| | pPE 36:2 | [M+H] | 728.5594 | 7.37 |
| | pPE 36:4 | [M+H] | 724.5281 | 6.72 |
| | pPE 36:5 | [M+H] | 722.5125 | 6.34 |
| | pPE 38:1 | [M+H] | 758.6063 | 8.27 |
| | pPE 38:2 | [M+H] | 756.5907 | 7.95 |
| | pPE 38:3 | [M+H] | 754.5751 | 7.58 |
| | pPE 38:4 | [M+H] | 752.5594 | 7.33 |
| | pPE 38:6 | [M+H] | 748.5281 | 6.64 |
| | pPE 40:4 | [M+H] | 780.5907 | 7.78 |
| | pPE 40:5 | [M+H] | 778.5751 | 7.46 |
| | pPE 40:6 | [M+H] | 776.5594 | 7.25 |
| SM | SM 21:0 | [M] | 523.3876 | 1.87 |
| | SM 30:1 | [M] | 647.5128 | 4.46 |
| | SM 30:1 | [M+Na] | 669.4948 | 4.41 |
| | SM 31:1 | [M] | 661.5284 | 4.84 |
| | SM 32:0 | [M] | 677.5597 | 5.53 |
| | SM 32:0 | [M+Na] | 699.5417 | 5.47 |

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| | SM 32:1 | [M+Na] | 697.5261 | 2.13 |
| | SM 32:1 | [M+Na] | 697.5261 | 5.23 |
| | SM 32:2 | [M] | 673.5284 | 4.66 |
| | SM 33:0 | [M] | 691.5754 | 5.86 |
| | SM 33:1 | [M] | 689.5597 | 4.41 |
| | SM 33:1 | [M+Na] | 711.5417 | 5.6 |
| | SM 33:2 | [M] | 687.5441 | 5.05 |
| | SM 34:1 | [M] | 703.5754 | 5.89 |
| | SM 34:1 | [M+Na] | 725.5573 | 5.94 |
| | SM 34:2 | [M+Na] | 723.5417 | 5.37 |
| | SM 35:1 | [M] | 717.5911 | 5.67 |
| | SM 35:1 | [M] | 717.5911 | 6.26 |
| | SM 35:1 | [M+Na] | 739.573 | 6.27 |
| | SM 35:2 | [M] | 715.5754 | 5.66 |
| | SM 35:2 | [M+Na] | 737.5573 | 5.78 |
| | SM 36:1 | [M+Na] | 753.5886 | 6.67 |
| | SM 36:2 | [M+Na] | 751.573 | 6.14 |
| | SM 37:1 | [M] | 745.6224 | 6.97 |
| | SM 37:2 | [M] | 743.6067 | 6.56 |
| | SM 38:0 | [M] | 761.6536 | 7.55 |
| | SM 38:1 | [M] | 759.638 | 7.1 |
| | SM 38:1 | [M+Na] | 781.6199 | 7.32 |
| | SM 38:2 | [M] | 757.6224 | 6.69 |
| | SM 38:4 | [M] | 753.5911 | 5.87 |
| | SM 39:0 | [M] | 775.6693 | 7.85 |
| | SM 39:1 | [M+Na] | 795.6356 | 7.66 |
| | SM 39:2 | [M] | 771.638 | 7.15 |
| | SM 40:1 | [M+Na] | 809.6513 | 7.92 |
| | SM 40:2 | [M] | 785.6536 | 7.05 |
| | SM 40:2 | [M+Na] | 807.6356 | 7.44 |
| | SM 41:1 | [M+Na] | 823.6669 | 8.21 |
| | SM 41:2 | [M+Na] | 821.6513 | 7.76 |
| | SM 41:4 | [M] | 795.638 | 6.86 |

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|-----|----------|---------|----------|-------|
| | SM 41:5 | [M] | 793.6224 | 6.32 |
| | SM 42:1 | [M+Na] | 837.6826 | 8.49 |
| | SM 42:2 | [M] | 813.6849 | 11.7 |
| | SM 42:2 | [M+Na] | 835.6669 | 7.93 |
| | SM 42:4 | [M] | 809.6536 | 7 |
| | SM 42:5 | [M] | 807.638 | 6.61 |
| | SM 43:1 | [M] | 829.7163 | 8.77 |
| | SM 43:1 | [M+Na] | 851.6982 | 8.78 |
| | SM 43:2 | [M] | 827.7006 | 8.31 |
| | SM 43:4 | [M] | 823.6693 | 7.34 |
| | SM 44:1 | [M] | 843.7319 | 9.05 |
| | SM 44:2 | [M] | 841.7163 | 8.49 |
| TAG | TAG 40:0 | [M+NH4] | 712.6451 | 9.45 |
| | TAG 42:0 | [M+NH4] | 740.6764 | 9.77 |
| | TAG 42:1 | [M+NH4] | 738.6608 | 9.49 |
| | TAG 44:1 | [M+NH4] | 766.6921 | 9.79 |
| | TAG 46:0 | [M+NH4] | 796.739 | 10.31 |
| | TAG 46:1 | [M+Na] | 799.6787 | 10.08 |
| | TAG 46:1 | [M+NH4] | 794.7233 | 10.04 |
| | TAG 46:2 | [M+NH4] | 792.7077 | 9.8 |
| | TAG 48:0 | [M+NH4] | 824.7702 | 10.55 |
| | TAG 48:1 | [M+NH4] | 822.7546 | 10.29 |
| | TAG 48:2 | [M+NH4] | 820.739 | 10.07 |
| | TAG 48:3 | [M+NH4] | 818.7233 | 9.84 |
| | TAG 49:0 | [M+NH4] | 838.7859 | 10.66 |
| | TAG 49:1 | [M+NH4] | 836.7702 | 10.45 |
| | TAG 49:2 | [M+NH4] | 834.7546 | 10.24 |
| | TAG 50:0 | [M+NH4] | 852.8015 | 10.79 |
| | TAG 50:1 | [M+NH4] | 850.7859 | 10.53 |
| | TAG 50:2 | [M+NH4] | 848.7702 | 10.3 |
| | TAG 50:3 | [M+NH4] | 846.7546 | 10.11 |
| | TAG 50:3 | [M+NH4] | 846.7546 | 9.2 |
| | TAG 50:4 | [M+NH4] | 844.739 | 8.98 |

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|----------|---------|----------|-------|
| TAG 50:4 | [M+NH4] | 844.739 | 9.91 |
| TAG 50:5 | [M+NH4] | 842.7233 | 9.73 |
| TAG 51:1 | [M+NH4] | 864.8015 | 10.69 |
| TAG 51:2 | [M+NH4] | 862.7859 | 10.51 |
| TAG 51:3 | [M+NH4] | 860.7702 | 10.31 |
| TAG 51:4 | [M+NH4] | 858.7546 | 10.06 |
| TAG 52:0 | [M+Na] | 885.7882 | 11.02 |
| TAG 52:0 | [M+NH4] | 880.8328 | 11.03 |
| TAG 52:1 | [M+Na] | 883.7726 | 10.82 |
| TAG 52:1 | [M+NH4] | 878.8172 | 10.8 |
| TAG 52:2 | [M+NH4] | 876.8015 | 10.54 |
| TAG 52:3 | [M+Na] | 879.7413 | 10.38 |
| TAG 52:3 | [M+NH4] | 874.7859 | 10.36 |
| TAG 52:4 | [M+NH4] | 872.7702 | 10.17 |
| TAG 52:4 | [M+NH4] | 872.7702 | 9.27 |
| TAG 52:5 | [M+NH4] | 870.7546 | 9.99 |
| TAG 52:6 | [M+Na] | 873.6944 | 9.77 |
| TAG 52:6 | [M+NH4] | 868.739 | 9.79 |
| TAG 53:0 | [M+NH4] | 894.8484 | 11.14 |
| TAG 53:1 | [M+NH4] | 892.8328 | 10.92 |
| TAG 53:2 | [M+NH4] | 890.8172 | 10.73 |
| TAG 53:3 | [M+NH4] | 888.8015 | 10.54 |
| TAG 53:4 | [M+NH4] | 886.7859 | 10.34 |
| TAG 53:5 | [M+NH4] | 884.7702 | 10.16 |
| TAG 54:1 | [M+Na] | 911.8038 | 11.02 |
| TAG 54:1 | [M+NH4] | 906.8484 | 11.05 |
| TAG 54:2 | [M+NH4] | 904.8328 | 10.84 |
| TAG 54:3 | [M+NH4] | 902.8172 | 10.63 |
| TAG 54:4 | [M+NH4] | 900.8015 | 10.42 |
| TAG 54:5 | [M+NH4] | 898.7859 | 10.24 |
| TAG 54:6 | [M+Na] | 901.7257 | 10.04 |
| TAG 54:6 | [M+NH4] | 896.7702 | 10.04 |
| TAG 54:7 | [M+Na] | 899.71 | 9.84 |

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|----------------|-------------|---------|----------|-------|
| | TAG 54:7 | [M+NH4] | 894.7546 | 9.89 |
| | TAG 54:8 | [M+NH4] | 892.739 | 9.67 |
| | TAG 56:0 | [M+NH4] | 936.8954 | 11.52 |
| | TAG 56:1 | [M+NH4] | 934.8797 | 11.28 |
| | TAG 56:2 | [M+NH4] | 932.8641 | 11.06 |
| | TAG 56:3 | [M+NH4] | 930.8484 | 10.87 |
| | TAG 56:4 | [M+NH4] | 928.8328 | 10.7 |
| | TAG 56:5 | [M+NH4] | 926.8172 | 10.54 |
| | TAG 56:6 | [M+NH4] | 924.8015 | 10.36 |
| | TAG 56:7 | [M+NH4] | 922.7859 | 10.17 |
| | TAG 56:8 | [M+NH4] | 920.7702 | 9.99 |
| | TAG 56:9 | [M+NH4] | 918.7546 | 9.82 |
| | TAG 58:1 | [M+NH4] | 962.911 | 11.55 |
| | TAG 58:10 | [M+NH4] | 944.7702 | 9.91 |
| | TAG 58:3 | [M+NH4] | 958.8797 | 11.1 |
| | TAG 58:5 | [M+NH4] | 954.8484 | 10.76 |
| | TAG 58:6 | [M+NH4] | 952.8328 | 10.6 |
| | TAG 58:7 | [M+NH4] | 950.8172 | 10.49 |
| | TAG 58:8 | [M+NH4] | 948.8015 | 10.23 |
| | TAG 58:9 | [M+NH4] | 946.7859 | 10.1 |
| | TAG 60:12 | [M+NH4] | 968.7702 | 10.88 |
| | TAG 62:1 | [M+NH4] | 1018.974 | 12.09 |
| Acylcarnitines | L-carnitine | | 162.1 | 0.57 |
| | AC2:0 | | 204.1 | 0.73 |
| | AC3:0 | | 218.2 | 0.87 |
| | AC4:0 | | 232.2 | 3.22 |
| | AC5:0 | | 246.2 | 3.86 |
| | AC6:0 | | 260.2 | 4.50 |
| | AC8:1 | | 286.2 | 5.30 |
| | AC8:0 | | 288.2 | 6.12 |
| | AC10:1 | | 314.2 | 6.80 |
| | AC10:0 | | 316.2 | 7.30 |
| | AC12:0-OH | | 360.2 | 7.40 |

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|--|-----------|--|-------|-------|
| | AC12:1 | | 342.2 | 7.40 |
| | AC12:0 | | 344.2 | 8.20 |
| | AC14:0-OH | | 388.3 | 8.20 |
| | AC14:1 | | 370.3 | 8.20 |
| | AC14:0 | | 372.3 | 9.10 |
| | AC14:2 | | 368.3 | 7.80 |
| | AC16:0-OH | | 416.3 | 9.20 |
| | AC16:1 | | 398.3 | 9.20 |
| | AC16:0 | | 400.3 | 9.80 |
| | AC18:2-OH | | 424.3 | 9.20 |
| | AC18:2 | | 424.3 | 9.40 |
| | AC18:1 | | 426.3 | 10.00 |
| | AC18:0 | | 428.3 | 10.80 |
| | AC20:4 | | 448.3 | 9.70 |
| | AC20:3 | | 450.2 | 10.00 |
| | AC20:2 | | 452.3 | 10.30 |
| | AC20:1 | | 454.3 | 11.00 |
| | AC20:0 | | 456.3 | 12.30 |

| Lipids in Negative Mode | | | | |
|--------------------------------|----------------------|-----------------------|------------|---------------|
| Class | Compound name | Type of adduct | m/z | RT/min |
| FFA | FFA(16:0) | | 255.2329 | 2.3 |
| | FFA(18:0) | | 283.2642 | 3.27 |
| | FFA(18:1) | | 281.2486 | 2.5 |
| | FFA(18:2) | | 279.2329 | 1.92 |
| | FFA(20:0) | | 311.2955 | 4.3 |
| | FFA(20:1) | | 309.2799 | 3.45 |
| | FFA(20:2) | | 307.2642 | 2.82 |
| | FFA(22:0) | | 339.3268 | 5.29 |
| | FFA(22:1) | | 337.3112 | 4.43 |
| | FFA(22:2) | | 335.2955 | 3.76 |
| | FFA(22:3) | | 333.2799 | 3.18 |
| | FFA(24:0) | | 367.3581 | 6.21 |

| | | | | |
|------------|-------------------------------------|----------|----------|------|
| | FFA(24:1) | | 365.3425 | 5.36 |
| | FFA(24:2) | | 363.3268 | 4.7 |
| | FFA(24:3) | | 361.3112 | 4.07 |
| | FFA(20:4) | | 303.2329 | 1.85 |
| CerP | CerP 34:1 | [M-H] | 616.4706 | 5.91 |
| LPE | LPE 16:0 | [M-H] | 452.2777 | 1.71 |
| | LPE 18:0 | [M-H] | 480.309 | 2.49 |
| | LPE 18:1 | [M-H] | 478.2934 | 1.88 |
| | LPE 18:2 | [M-H] | 476.2777 | 1.4 |
| | LPE 20:3 | [M-H] | 502.2934 | 1.68 |
| | LPE 20:4 | [M-H] | 500.2777 | 1.37 |
| | LPE 22:4 | [M-H] | 528.309 | 1.91 |
| | LPE 22:5 | [M-H] | 526.2934 | 1.62 |
| | LPE 22:6 | [M-H] | 524.2777 | 1.33 |
| Spinganine | N-(hexadecanoyl)- sphing-4-enine | [M-H] | 536.5041 | 6.85 |
| PA | PA 34:2 | [M-H] | 671.4652 | 6.36 |
| PC | PC 30:0 | [M-Ac-H] | 764.5442 | 6.12 |
| | PC 30:1 | [M-Ac-H] | 762.5285 | 5.59 |
| | PC 30:2 | [M-Ac-H] | 760.5129 | 5.06 |
| | PC 32:0 | [M-Ac-H] | 792.5754 | 6.81 |
| | PC 32:1 | [M-Ac-H] | 790.5598 | 6.26 |
| | PC 32:2 | [M-Ac-H] | 788.5442 | 5.77 |
| | PC 32:3 | [M-Ac-H] | 786.5285 | 5.32 |
| | PC 33:1 | [M-Ac-H] | 804.5754 | 6.6 |
| | PC 33:2 | [M-Ac-H] | 802.5598 | 6.13 |
| | PC 34:1 | [M-Ac-H] | 818.5911 | 6.85 |
| | PC 34:2 | [M-Ac-H] | 816.5754 | 4.54 |
| | PC 34:3 | [M-Ac-H] | 814.5598 | 5.94 |
| | PC 34:4 | [M-Ac-H] | 812.5442 | 5.71 |
| | PC 35:1 | [M-Ac-H] | 832.6068 | 7.24 |
| | PC 35:2 | [M-Ac-H] | 830.5911 | 6.75 |
| | PC 35:3 | [M-Ac-H] | 828.5754 | 6.26 |
| | PC 36:1 | [M-Ac-H] | 846.6224 | 7.54 |

| | | | | |
|----|----------|----------|----------|-------|
| | PC 36:2 | [M-Ac-H] | 844.6068 | 10.73 |
| | PC 36:2 | [M-Ac-H] | 844.6068 | 7.04 |
| | PC 36:3 | [M-Ac-H] | 842.5911 | 6.56 |
| | PC 36:4 | [M-Ac-H] | 840.5754 | 6.23 |
| | PC 36:5 | [M-Ac-H] | 838.5598 | 5.81 |
| | PC 36:6 | [M-Ac-H] | 836.5442 | 5.45 |
| | PC 37:2 | [M-Ac-H] | 858.6224 | 7.42 |
| | PC 37:3 | [M-Ac-H] | 856.6068 | 6.91 |
| | PC 37:4 | [M-Ac-H] | 854.5911 | 6.68 |
| | PC 37:6 | [M-Ac-H] | 850.5598 | 5.91 |
| | PC 38:2 | [M-Ac-H] | 872.6381 | 7.71 |
| | PC 38:3 | [M-Ac-H] | 870.6224 | 7.3 |
| | PC 38:4 | [M-Ac-H] | 868.6068 | 6.92 |
| | PC 38:5 | [M-Ac-H] | 866.5911 | 6.55 |
| | PC 38:6 | [M-Ac-H] | 864.5754 | 6.19 |
| | PC 38:7 | [M-Ac-H] | 862.5598 | 5.65 |
| | PC 39:6 | [M-Ac-H] | 878.5911 | 6.58 |
| | PC 40:4 | [M-Ac-H] | 896.6381 | 7.53 |
| | PC 40:5 | [M-Ac-H] | 894.6224 | 7.21 |
| | PC 40:6 | [M-Ac-H] | 892.6068 | 6.83 |
| | PC 40:7 | [M-Ac-H] | 890.5911 | 6.31 |
| | PC 40:8 | [M-Ac-H] | 888.5754 | 5.9 |
| | PC 42:10 | [M-Ac-H] | 912.5754 | 5.78 |
| PE | PE 32:0 | [M-H] | 690.5074 | 6.79 |
| | PE 32:1 | [M-H] | 688.4917 | 6.28 |
| | PE 33:0 | [M-H] | 704.5231 | 7.08 |
| | PE 33:1 | [M-H] | 702.5074 | 6.6 |
| | PE 34:1 | [M-H] | 716.5231 | 6.9 |
| | PE 34:2 | [M-H] | 714.5074 | 6.43 |
| | PE 34:3 | [M-H] | 712.4917 | 6.02 |
| | PE 35:1 | [M-H] | 730.5387 | 7.14 |
| | PE 35:2 | [M-H] | 728.5231 | 6.77 |
| | PE 35:3 | [M-H] | 726.5074 | 6.23 |

| | | | | |
|-----|----------|-------|----------|------|
| | PE 35:4 | [M-H] | 724.4917 | 6.09 |
| | PE 36:0 | [M-H] | 746.57 | 7.92 |
| | PE 36:1 | [M-H] | 744.5543 | 6.94 |
| | PE 36:1 | [M-H] | 744.5543 | 7.49 |
| | PE 36:2 | [M-H] | 742.5387 | 7.06 |
| | PE 36:3 | [M-H] | 740.5231 | 5.14 |
| | PE 36:3 | [M-H] | 740.5231 | 6.58 |
| | PE 36:4 | [M-H] | 738.5074 | 6.26 |
| | PE 36:5 | [M-H] | 736.4917 | 6.01 |
| | PE 37:4 | [M-H] | 752.5231 | 6.72 |
| | PE 38:2 | [M-H] | 770.57 | 7.51 |
| | PE 38:3 | [M-H] | 768.5543 | 7.29 |
| | PE 38:4 | [M-H] | 766.5387 | 6.96 |
| | PE 38:5 | [M-H] | 764.5231 | 6.56 |
| | PE 38:6 | [M-H] | 762.5074 | 6.16 |
| | PE 40:4 | [M-H] | 794.57 | 7.47 |
| | PE 40:5 | [M-H] | 792.5543 | 7.2 |
| | PE 40:6 | [M-H] | 790.5387 | 6.95 |
| | PE 40:7 | [M-H] | 788.5231 | 6.44 |
| | PE 40:8 | [M-H] | 786.5074 | 6.02 |
| PG | PG 33:0 | [M-H] | 735.5176 | 6.04 |
| | PG 36:0 | [M-H] | 777.5646 | 6.88 |
| | PG 36:2 | [M-H] | 773.5333 | 6.04 |
| PI | PI 32:1 | [M-H] | 807.5024 | 5.05 |
| | PI 34:2 | [M-H] | 833.518 | 5.22 |
| | PI 36:2 | [M-H] | 861.5493 | 5.87 |
| | PI 36:3 | [M-H] | 859.5337 | 5.36 |
| | PI 36:4 | [M-H] | 857.518 | 5.22 |
| | PI 38:3 | [M-H] | 887.5649 | 6.04 |
| | PI 38:4 | [M-H] | 885.5493 | 5.85 |
| | PI 38:5 | [M-H] | 883.5337 | 5.37 |
| pPE | pPE 32:1 | [M-H] | 672.4968 | 6.65 |
| | pPE 34:1 | [M-H] | 700.5281 | 7.25 |

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|----|----------|-------|----------|------|
| | pPE 34:2 | [M-H] | 698.5124 | 6.78 |
| | pPE 34:3 | [M-H] | 696.4968 | 6.4 |
| | pPE 36:1 | [M-H] | 728.5594 | 7.81 |
| | pPE 36:2 | [M-H] | 726.5438 | 7.36 |
| | pPE 36:3 | [M-H] | 724.5281 | 6.96 |
| | pPE 36:4 | [M-H] | 722.5124 | 6.72 |
| | pPE 36:5 | [M-H] | 720.4968 | 6.38 |
| | pPE 38:1 | [M-H] | 756.5907 | 8.3 |
| | pPE 38:2 | [M-H] | 754.5751 | 7.97 |
| | pPE 38:3 | [M-H] | 752.5594 | 7.58 |
| | pPE 38:4 | [M-H] | 750.5438 | 7.29 |
| | pPE 38:5 | [M-H] | 748.5281 | 6.8 |
| | pPE 38:6 | [M-H] | 746.5124 | 6.61 |
| | pPE 40:4 | [M-H] | 778.5751 | 7.82 |
| | pPE 40:5 | [M-H] | 776.5594 | 7.43 |
| | pPE 40:6 | [M-H] | 774.5438 | 7.25 |
| | pPE 42:5 | [M-H] | 804.5907 | 7.91 |
| | pPE 42:6 | [M-H] | 802.5751 | 7.8 |
| PS | PS 36:1 | [M-H] | 788.5442 | 6.43 |
| | PS 38:4 | [M-H] | 810.5285 | 6.01 |

Table S2. Correlation of MNSI index with baseline variables

*p=0.017; BMI, body mass index; DBP, diastolic blood pressure; FPG, fasting plasma glucose; SBP, systolic blood pressure.

| | MNSI Index | BMI | Age | SBP | DBP | FPG | Cholesterol | Triglyceride |
|----------------------|-------------------|------------|------------|------------|------------|------------|--------------------|---------------------|
| MNSI Index | 1 | | | | | | | |
| BMI | 0.113 | 1 | | | | | | |
| Age | -0.014 | -0.008 | 1 | | | | | |
| SBP | 0.201 | 0.268 | 0.086 | 1 | | | | |
| DBP | 0.250 * | 0.263 | -0.011 | 0.634 | 1 | | | |
| FPG | -0.098 | -0.233 | -0.318 | 0.039 | -0.017 | 1 | | |
| Cholesterol | -0.071 | -0.041 | -0.108 | 0.075 | 0.01 | 0.466 | 1 | |
| Triglycerides | -0.044 | 0.144 | -0.208 | 0.02 | -0.024 | 0.454 | 0.562 | 1 |

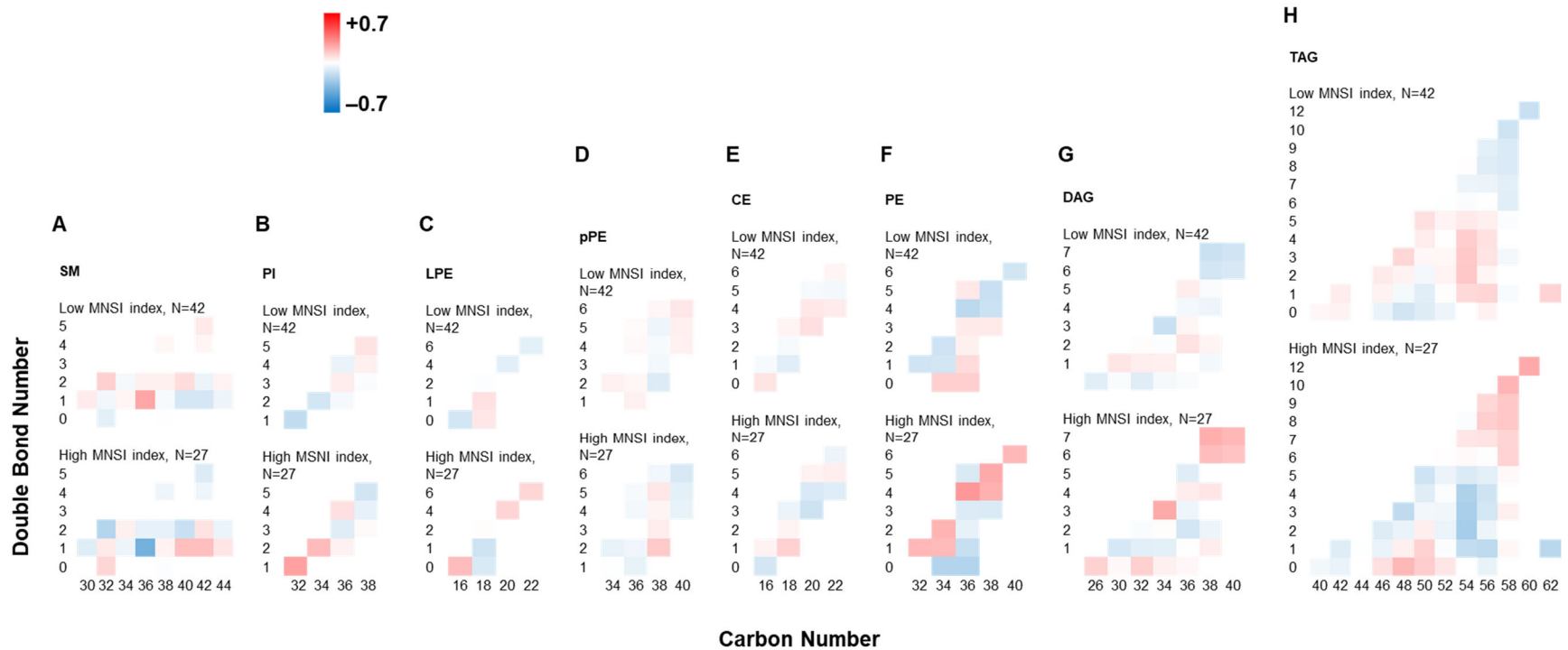


Figure S1. Various lipid class abundance by neuropathy status

Heatmap of lipid abundances reveals no statistically significant differences in participants with ($n = 27$; high MNSI index) versus without neuropathy ($n = 42$; low MNSI index) for (A) sphingomyelins (SM), (B) phosphatidylinositols (PI), (C) lysophosphatidylethanolamines (LPE), (D) plasmalogen-phosphatidylethanolamines (pPE), (E) cholesteryl-esters (CE), (F) phosphatidylethanolamines (PE), (G) diacylglycerols (DAG), (H) triacylglycerols (TAG).

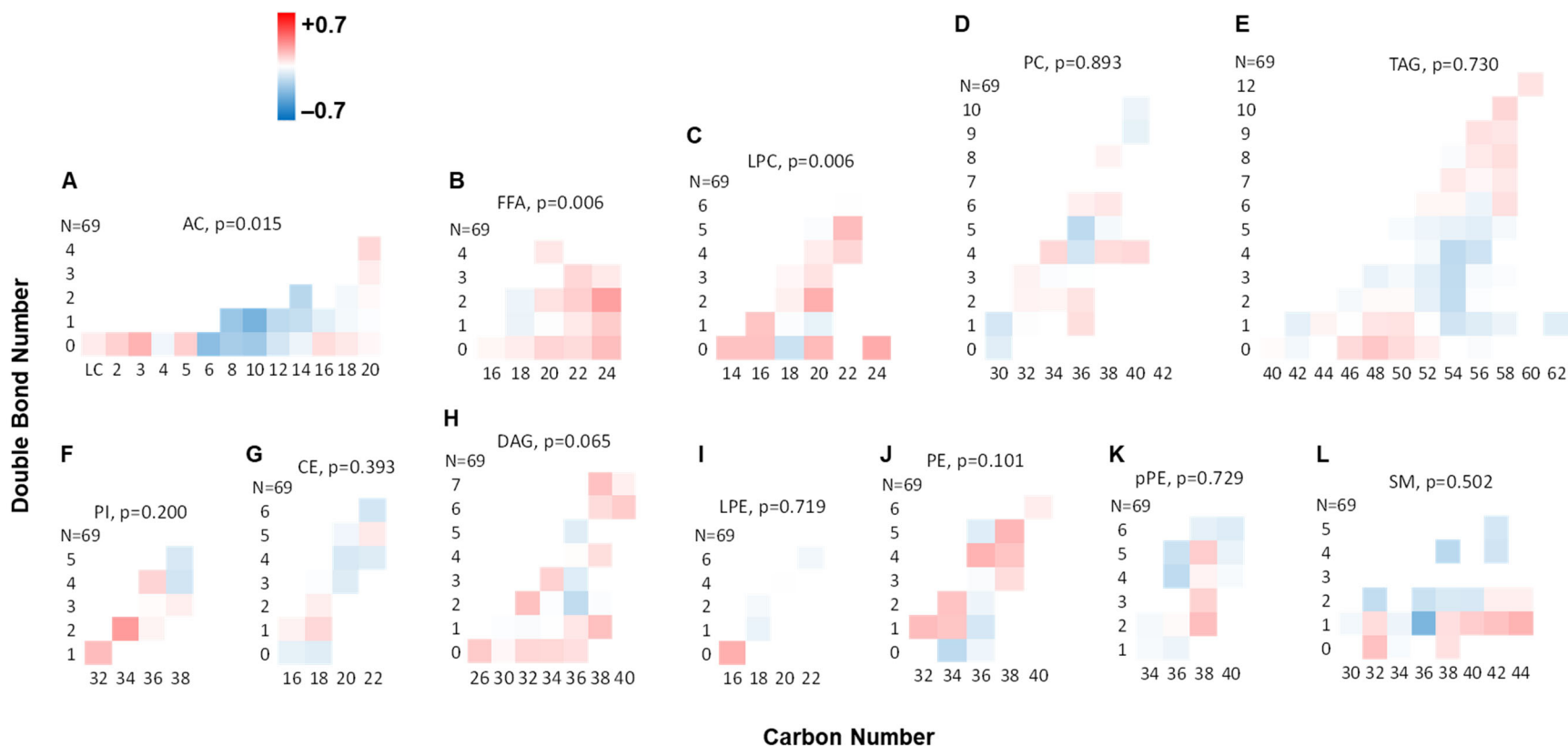


Figure S2. Correlation between neuropathy severity and lipids

Heatmap of Pearson correlation coefficients of neuropathy severity (MNSI index) with each lipid by lipid class by carbon number (x-axis) and double bond number (y-axis) for (A) acylcarnitines (AC), (B) free fatty acids (FFA), (C) lysophosphatidylcholines (LPC), (D) phosphatidylcholines (PC), (E) triacylglycerols (TAG), (F) phosphatidylinositols (PI), (G) cholesteryl-esters (CE), (H) diacylglycerols (DAG), (I) lysophosphatidylethanolamines (LPE), (J) phosphatidylethanolamines (PE), (K) plasmeyn-yl-phosphatidylethanolamines (pPE), and (L) sphingomyelins (SM).