**SUPPLEMENTAL DATA**

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| **Antidepressant drugs** | **Patients (n (%))** |
| **SSRI** | **175 (38.0)** |
| Paroxetine | 28 (6.1) |
| Fluoxetine | 12 (2.6) |
| Escitalopram | 74 (16.1) |
| Citalopram | 44 (9.6) |
| Sertraline | 17 (3.7) |
| **SNRI** | **177 (38.5)** |
| Duloxetine | 14 (3.0) |
| Venlafaxine | 162 (35.2) |
| Milnacipran | 1 (0.2) |
| **TCA** | **38 (8.3)** |
| Clomipramine | 31 (6.7) |
| Amoxapine | 1 (0.2) |
| Amitriptyline | 5 (1.1) |
| Imipramine | 1 (0.2) |
| **Others** | **70 (15.2)** |
| Mianserine | 5 (1.1) |
| Mirtazapine | 23 (5.0) |
| Tianeptine | 2 (0.4) |
| Iproniazid | 5 (1.1) |
| Moclobemide | 1 (0.2) |
| Agomelatine | 12 (2.6) |
| Physical treatment (ECT or rTMS) | 22 (4.8) |
| **Supplemental Table S1. Antidepressant treatment received by patients in the METADAP cohort.** SSRI: Selective Serotonin Reuptake Inhibitors – SNRI: Serotonin-Norepinephrine Reuptake Inhibitors – TCA: Tricyclic Antidepressant – ECT: Electroconvulsive therapy – rTMS: Repetitive Transcranial Magnetic Simulation. | |

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|  | **Healthy controls (n=893)** | **MDE patients at baseline (n=460)** | **MDE patients at M3 (n=238)** | **MDE patients at M6 (n=173)** |
| **Metabolites** | **Values (m(SD))** | **Values (m(SD))** | **Values (m(SD))** | **Values (m(SD))** |
| **Short chain acylcarnitines** | | | | |
| **C3** | 0.34 (0.10) | 0.35 (0.13) | 0.36 (0.14) | 0.35 (0.12) |
| **C4** | 0.22 (0.09) | 0.23 (0.13) | 0.26 (0.19) | 0.25 (0.12) |
| **C4-OH** | 0.04 (0.02) | 0.05 (0.02) | 0.04 (0.02) | 0.04 (0.03) |
| **C5** | 0.14 (0.04) | 0.13 (0.04) | 0.13 (0.05) | 0.13 (0.05) |
| **Medium chain acylcarnitines** | | | | |
| **C6** | 0.06 (0.02) | 0.05 (0.02) | 0.06 (0.03) | 0.06 (0.02) |
| **C9** | 0.08 (0.03) | 0.08 (0.03) | 0.09 (0.03) | 0.09 (0.03) |
| **C10** | 0.32 (0.14) | 0.22 (0.11) | 0.27 (0.13) | 0.28 (0.13) |
| **Long chain acylcarnitines** | | | | |
| **C14:1** | 0.13 (0.04) | 0.10 (0.04) | 0.12 (0.14) | 0.12 (0.04) |
| **C16** | 0.11 (0.03) | 0.09 (0.03) | 0.10 (0.03) | 0.10 (0.02) |
| **C18** | 0.04 (0.01) | 0.04 (0.01) | 0.04 (0.01) | 0.04 (0.01) |
| **C18:1** | 0.12 (0.03) | 0.11 (0.04) | 0.11 (0.03) | 0.11 (0.03) |
| **C18:2** | 0.05 (0.02) | 0.04 (0.01) | 0.04 (0.01) | 0.04 (0.01) |
| **Supplemental Table S2. Plasma concentration values of acylcarnitines in healthy controls and MDE patients during follow-up.** M3: at 3 months – M6: at 6 months – m: mean – SD: Standard deviation – Metabolite concentrations were not log2 transformed to facilitate comparison with laboratory standards – Metabolite abbreviations are defined in Table 2 – Values are in µM. | | | | |

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|  | **MDE patients at baseline vs.**  **Healthy controls** | | **MDE patients at M3 vs.**  **Healthy controls** | | **MDE patients at M6 vs.**  **Healthy controls** | | |
| **Metabolites** | **Estimated difference (SE)** | **p** | **Estimated difference (SE)** | **p** | **Estimated difference (SE)** | **p** | |
| **Short chain acylcarnitines** | | | | | | | |
| **C3** | 0.02 (0.02) | 0.31 | 0.05 (0.03) | 0.07 | 0.00 (0.03) | 0.93 |
| **C4** | 0.03 (0.03) | 0.36 | 0.17 (0.04) | **0.0002** | 0.12 (0.05) | 0.01 | |
| **C4-OH** | 0.26 (0.03) | **9.4E-15** | 0.17 (0.04) | **4.5E-5** | 0.08 (0.05) | 0.08 | |
| **C5** | -0.19 (0.02) | **1.4E-14** | -0.17 (0.03) | **1.5E-7** | -0.18 (0.04) | **6.5E-7** |
| **Medium chain acylcarnitines** | | | | | | | |
| **C6** | -0.24 (0.03) | **5.5E-14** | -0.07 (0.04) | 0.11 | -0.08 (0.05) | 0.09 | |
| **C9** | -0.04 (0.03) | 0.20 | 0.16 (0.04) | **5.5E-6** | 0.15 (0.04) | **0.0002** |
| **C10** | -0.58 (0.04) | **<2E-16** | -0.25 (0.05) | **1.7E-7** | -0.17 (0.05) | 0.002 | |
| **Long chain acylcarnitines** | | | | | | | |
| **C14:1** | -0.40 (0.03) | **<2E-16** | -0.15 (0.03) | **1.4E-5** | -0.09 (0.04) | 0.03 | |
| **C16** | -0.24 (0.02) | **<2E-16** | -0.15 (0.03) | **7.4E-9** | -0.12 (0.03) | **5.4E-5** | |
| **C18** | -0.17 (0.02) | **1.6E-14** | -0.10 (0.03) | **0.0006** | -0.05 (0.03) | 0.15 | |
| **C18:1** | -0.15 (0.03) | **4.1E-9** | -0.14 (0.03) | **1.5E-5** | -0.09 (0.03) | 0.02 | |
| **C18:2** | -0.26 (0.03) | **<2E-16** | -0.26 (0.04) | **3.8E-11** | -0.20 (0.04) | **8.9E-6** | |
| **Supplemental Table S3. Difference of plasma levels of acylcarnitines between healthy controls and MDE patients during follow-up.** Linear regression adjusted for age, gender, total blood cholesterol, glycemia and BMI were performed– M3: at 3 months – M6: at 6 months – SE: Standard error – Metabolite concentrations were log2 transformed – Metabolite abbreviations are defined in Table 2 – **Bold p-value**: Significance after Bonferroni corrections. As reported in table 1 and in the “Material and methods” section, these acylcarnitine species were analyzed as quantitative variables. | | | | | | | |

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| **Metabolites** | **Healthy controls**  **(n=893)** | **MDE patients**  **at baseline (n=460)** | **p-value** | **MDE patients**  **at M3 (n=238)** | **p-value**  **Control** | **p-value**  **Baseline** | **MDE patients**  **at M6 (n=173)** | **p-value**  **Control** | **p-value**  **Baseline** | |
| **Short chain acylcarnitines** | | | | | | | | | | |
| **C3-OH (%(n))** | 99.9 (892) | 99.3 (457) | 0.99 | 97.9 (233) | 0.99 | 0.15 | 98.8 (171) | 0.88 | 0.60 | |
| **C3:1 (%(n))** | 98.0 (875) | 79.6 (366) | **<2E-16** | 77.7 (185) | **<2E-16** | 0.40 | 80.3 (139) | **1.4E-11** | 0.63 | |
| **C4:1 (%(n))** | 88.9 (794) | 60.2 (277) | **<2E-16** | 65.1 (155) | **4.6E-15** | 0.35 | 61.8 (107) | **3.3E-12** | 0.58 | |
| **C5-DC (%(n))** | 70.9 (632) | 50.4 (232) | **2.9E-13** | 48.3 (115) | **2.0E-12** | 0.35 | 53.2 (92) | **2.7E-6** | 0.51 | |
| **C5-M-DC (%(n))** | 89.9 (802) | 85.0 (391) | 0.03 | 84.5 (201) | 0.02 | 0.89 | 86.7 (150) | 0.31 | 0.54 | |
| **C5-OH (%(n))** | 75.1 (669) | 42.2 (194) | **<2E-16** | 42.9 (102) | **<2E-16** | 0.76 | 44.5 (77) | **1.8E-13** | 0.67 | |
| **C5:1 (%(n))** | 98.5 (879) | 94.8 (436) | 0.002 | 95.8 (228) | 0.01 | 0.51 | 96.0 (166) | 0.14 | 0.35 | |
| **C5:1-DC (%(n))** | 92.2 (822) | 80.2 (369) | **3.1E-8** | 80.3 (191) | **6.9E-9** | 0.79 | 82.7 (143) | 0.004 | 0.18 | |
| **Medium chain acylcarnitines** | | | | | | | | | | |
| **C6:1 (%(n))** | 92.7 (828) | 83.3 (383) | **3.2E-6** | 85.3 (203) | **0.0004** | 0.67 | 86.1 (149) | 0.02 | 0.28 | |
| **C7-DC (%(n))** | 41.4 (370) | 79.1 (364) | **<2E-16** | 70.1 (167) | **1.5E-10** | 0.04 | 75.1 (130) | **1.1E-9** | 0.48 |
| **C8 (%(n))** | 38.0 (339) | 51.3 (236) | **8.3E-8** | 33.2 (79) | 0.33 | **0.0002** | 36.4 (63) | 0.55 | 0.005 | |
| **C10:1 (%(n))** | 86.8 (775) | 91.1 (419) | 0.05 | 84.9 (202) | 0.46 | 0.04 | 88.4 (153) | 0.77 | 0.26 | |
| **C10:2 (%(n))** | 97.4 (870) | 92.8 (427) | **0.0001** | 89.5 (213) | **5.4E-6** | 0.14 | 90.8 (157) | **9.2E-5** | 0.24 | |
| **C12 (%(n))** | 47.7 (426) | 72.4 (333) | **3.7E-15** | 51.7 (123) | 0.49 | **4.5E-5** | 48.0 (83) | 0.33 | **1.9E-6** | |
| **C12-DC (%(n))** | 100 (893) | 100 (460) | - | 100 (238) | - | - | 100 (174) | - | - | |
| **C12:1 (%(n))** | 77.5 (692) | 92.8 (427) | **3.7E-9** | 88.7 (211) | 0.02 | 0.10 | 90.2 (156) | 0.01 | 0.38 | |
| **Long chain acylcarnitines** | | | | | | | | | | |
| **C14 (%(n))** | 51.1 (456) | 78.5 (361) | **<2E-16** | 56.3 (134) | 0.13 | **3.1E-7** | 59.0 (102) | 0.04 | **0.0001** | |
| **C14:1-OH (%(n))** | 56.4 (504) | 94.8 (436) | **<2E-16** | 89.1 (212) | **9.9E-15** | 0.01 | 91.3 (158) | **3.2E-12** | 0.30 | |
| **C14:2 (%(n))** | 12.3 (110) | 42.0 (193) | **<2E-16** | 24.8 (59) | **0.0001** | **0.0001** | 20.8 (36) | 0.13 | **2.9E-5** | |
| **C14:2-OH (%(n))** | 78.9 (704) | 92.4 (425) | **7.5E-8** | 89.1 (212) | 0.02 | 0.09 | 93.6 (162) | **0.0002** | 0.39 | |
| **C16-OH (%(n))** | 89.1 (796) | 95.7 (440) | **0.0001** | 95.8 (228) | 0.003 | 0.97 | 97.1 (168) | 0.004 | 0.41 | |
| **C16:1 (%(n))** | 84.3 (753) | 93.0 (428) | **2.2E-6** | 89.5 (213) | 0.03 | 0.31 | 92.5 (160) | 0.03 | 0.82 | |
| **C16:1-OH (%(n))** | 74.5 (665) | 90.9 (418) | **3.6E-10** | 88.7 (211) | **0.0003** | 0.28 | 87.3 (151) | 0.002 | 0.32 | |
| **C16:2 (%(n))** | 78.9 (705) | 90.7 (417) | **1.5E-7** | 86.1 (205) | 0.07 | 0.06 | 89.6 (155) | 0.01 | 0.77 | |
| **C16:2-OH (%(n))** | 100 (893) | 98.5 (7) | 0.99 | 99.2 (236) | 1.00 | 0.57 | 100 (173) | 1.00 | 0.99 | |
| **C18:1-OH (%(n))** | 99.9 (892) | 99.3 (457) | 0.08 | 99.6 (237) | 0.15 | 0.89 | 100 (173) | 1.00 | 1.00 | |
| **Supplemental Table S4. Numbers of subjects under the lower limit of quantification for acylcarnitines in healthy controls and MDD patients during follow-up**. Logistic regression adjusted for age, gender, BMI, total blood cholesterol, glycemia and antidepressant class were performed– MDE: Major depressive episode – M3: at 3 months – M6: at 6 months – n: number of subjects – P control: compared to healthy controls – P baseline: compared to MDE patients at baseline – Metabolite abbreviations are defined in Table 2 – **Bold p-value**: Significance after Bonferroni corrections. As reported in table 1 and in the “Material and methods” section, these acylcarnitine species were analyzed as qualitative variables. | | | | | | | | | | |

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| **Metabolites** | **rho** | **p** | **Adjusted-p** |
| **Correlation with HDRS total score** | | | |
| **C3** | -0.079 | 0.02 | 0.21 |
| **C4** | -0.099 | **0.003** | 0.02 |
| **C4-OH** | 0.110 | **0.001** | 0.02 |
| **C5** | -0.058 | 0.09 | 0.65 |
| **C6** | -0.105 | **0.002** | 0.02 |
| **C9** | -0.141 | **3.1E-5** | **2.9E-5** |
| **C10** | -0.201 | **2.3E-9** | **3.9E-7** |
| **C14:1** | -0.247 | **1.9E-13** | **1.1E-7** |
| **C16** | -0.116 | **0.0006** | 0.05 |
| **C18** | -0.129 | **0.0001** | 0.01 |
| **C18:1** | -0.015 | 0.67 | 0.62 |
| **C18:2** | -0.006 | 0.86 | 0.84 |
| **Correlation with QIDS-SR total score** | | | |
| **C3** | -0.092 | 0.008 | 0.02 |
| **C4** | -0.065 | 0.06 | 0.13 |
| **C4-OH** | 0.084 | 0.01 | 0.24 |
| **C5** | -0.049 | 0.15 | 0.64 |
| **C6** | -0.099 | **0.004** | 0.007 |
| **C9** | -0.169 | **7.2E-7** | **1.7E-6** |
| **C10** | -0.206 | **1.5E-9** | **5.4E-9** |
| **C14:1** | -0.215 | **2.4E-10** | **1.2E-8** |
| **C16** | -0.133 | **1.0E-4** | **0.003** |
| **C18** | -0.165 | **1.5E-6** | **0.0002** |
| **C18:1** | -0.042 | 0.22 | 0.28 |
| **C18:2** | -0.041 | 0.23 | 0.49 |
| **Supplemental Table S5. Correlation between HDRS total score, QIDS-SR total score and plasma acylcarnitine levels in depressed patients at baseline, M3 and M6.** Spearman’s correlation tests were performed for bivariate analyses – Linear regressions adjusted for age, gender, BMI, blood total cholesterol and glycemia were performed for multivariate analyses – Acylcarnitine concentrations were log2 transformed – HDRS: Hamilton Depression Rating Scale – QIDS-SR: Quick Inventory of Depressive Symptoms-Self-Report – **Bold p-value**: Significance after Bonferroni corrections. | | | |

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|  | **MDE patients at M3 vs.**  **MDE patients at baseline** | | **MDE patients at M6 vs.**  **MDE patients at baseline** | |
| **Metabolites** | **Estimated change (SE)** | **p** | **Estimated change (SE)** | **p** |
| **Short chain acylcarnitines** | | | | |
| **C3** | 0.01 (0.01) | 0.39 | -0.00 (0.01) | 0.83 |
| **C4** | 0.04 (0.02) | 0.01 | 0.01 (0.01) | 0.15 |
| **C4-OH** | -0.03 (0.02) | 0.05 | -0.03 (0.01) | 0.002 |
| **C5** | 0.01 (0.01) | 0.61 | -0.00 (0.01) | 0.93 |
| **Medium chain acylcarnitines** | | | | |
| **C6** | 0.04 (0.01) | 0.003 | 0.02(0.01) | 0.03 |
| **C9** | 0.06 (0.01) | **7.9E-6** | 0.03 (0.01) | **0.0005** |
| **C10** | 0.09 (0.02) | **7.7E-7** | 0.05 (0.01) | **2.7E-7** |
| **Long chain acylcarnitines** | | | | |
| **C14:1** | 0.06 (0.01) | **5.6E-7** | 0.04 (0.01) | **5.7E-8** |
| **C16** | 0.01 (0.01) | 0.19 | 0.01 (0.01) | 0.10 |
| **C18** | 0.02 (0.01) | 0.12 | 0.01 (0.01) | 0.02 |
| **C18:1** | -0.01 (0.01) | 0.44 | 0.00 (0.01) | 0.96 |
| **C18:2** | -0.01 (0.01) | 0.60 | 0.00 (0.01) | 0.93 |
| **Supplemental Table S6. Changes of plasma levels of acylcarnitines in depressed patients during follow-up.** Linear regression adjusted for age, gender, BMI, total blood cholesterol, glycemia and antidepressant class were performed– M3: at 3 months – M6: at 6 months – SE: Standard error – Metabolite concentrations were log2 transformed – Metabolite abbreviations are defined in Table 2 – **Bold p-value**: Significance after Bonferroni corrections | | | | |

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|  | **Responders vs. non-responders at M3** | | **Remitters vs. non-remitters at M3** | |
| **Metabolites** | **Estimated difference (SE)** | **p** | **Estimated difference (SE)** | **p** |
| **Acylcarnitines at baseline** | | | | |
| **C3** | -0.15 (0.30) | 0.63 | -0.03 (0.33) | 0.92 |
| **C4** | -0.50 (0.22) | 0.02 | -0.17 (0.24) | 0.48 |
| **C4-OH** | -0.18 (0.22) | 0.41 | -0.04 (0.24) | 0.86 |
| **C5** | -0.13 (0.32) | 0.69 | 0.05 (0.35) | 0.89 |
| **C6** | -0.13 (0.27) | 0.63 | -0.68 (0.31) | 0.03 |
| **C9** | 0.03 (0.27) | 0.92 | 0.35 (0.30) | 0.25 |
| **C10** | -0.19 (0.22) | 0.40 | -0.12 (0.25) | 0.63 |
| **C14:1** | -0.31 (0.34) | 0.37 | -0.24 (0.38) | 0.52 |
| **C16** | 0.34 (0.39) | 0.39 | -0.40 (0.43) | 0.35 |
| **C18** | 0.25 (0.34) | 0.46 | 0.12 (0.37) | 0.74 |
| **C18:1** | -0.08 (0.30) | 0.80 | -0.36 (0.33) | 0.28 |
| **C18:2** | -0.44 (0.33) | 0.18 | -0.43 (0.36) | 0.22 |
| **Acylcarnitines at M3** | | | | |
| **C3** | 0.20 (0.31) | 0.52 | -0.17 (0.34) | 0.62 |
| **C4** | -0.38 (0.21) | 0.07 | -0.21 (0.23) | 0.36 |
| **C4-OH** | -0.30 (0.22) | 0.18 | -0.28 (0.25) | 0.27 |
| **C5** | 0.29 (0.30) | 0.33 | -0.09 (0.32) | 0.77 |
| **C6** | -0.61 (0.26) | 0.02 | -0.62 (0.29) | 0.03 |
| **C9** | -0.35 (0.31) | 0.27 | -0.05 (0.34) | 0.88 |
| **C10** | -0.47 (0.22) | 0.03 | -0.26 (0.24) | 0.28 |
| **C14:1** | -0.29 (0.33) | 0.38 | -0.36 (0.36) | 0.32 |
| **C16** | 0.16 (0.38) | 0.68 | -0.73 (0.42) | 0.08 |
| **C18** | -0.02 (0.35) | 0.96 | -0.13 (0.37) | 0.72 |
| **C18:1** | -0.46 (0.33) | 0.17 | -0.64 (0.37) | 0.08 |
| **C18:2** | -0.49 (0.33) | 0.14 | -0.48 (0.34) | 0.17 |
| **Supplemental Table S7. Acylcarnitine levels according to response and remission status at M3.** Linear regression adjusted for age, gender, BMI, total blood cholesterol, glycemia and antidepressant class were performed – Acylcarnitine concentrations were log2 transformed – M3: At 3 months – SE: Standard Error – Response was a decrease of at least 50% from baseline in the HDRS score – Remission was a HDRS score lower or equal to 7 – The absence of Bold P-value indicates the absence of significance after Bonferroni corrections. | | | | |

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|  | **Responders vs. non-responders at M6** | | **Remitters vs. non-remitters at M6** | |
| **Metabolites** | **Estimated difference (SE)** | **p** | **Estimated difference (SE)** | **p** |
| **Acylcarnitines at baseline** | | | | |
| **C3** | -0.20 (0.37) | 0.59 | 0.27 (0.35) | 0.45 |
| **C4** | -0.05 (0.29) | 0.87 | 0.26 (0.27) | 0.33 |
| **C4-OH** | -0.36 (0.29) | 0.21 | -0.40 (0.27) | 0.14 |
| **C5** | 0.24 (0.41) | 0.55 | 0.37 (0.39) | 0.34 |
| **C6** | -0.37 (0.34) | 0.28 | -0.39 (0.33) | 0.24 |
| **C9** | -0.16 (0.35) | 0.66 | -0.02 (0.32) | 0.95 |
| **C10** | 0.11 (0.29) | 0.70 | -0.08 (0.29) | 0.79 |
| **C14:1** | 0.13 (0.44) | 0.76 | 0.02 (0.41) | 0.96 |
| **C16** | 0.22 (0.51) | 0.66 | 0.40 (0.48) | 0.41 |
| **C18** | 0.31 (0.45) | 0.49 | 0.07 (0.44) | 0.88 |
| **C18:1** | -0.04 (0.40) | 0.92 | 0.19 (0.38) | 0.61 |
| **C18:2** | -0.27 (0.40) | 0.51 | -0.07 (0.38) | 0.84 |
| **Acylcarnitines at M6** | | | | |
| **C3** | 0.40 (0.42) | 0.35 | 0.75 (0.40) | 0.06 |
| **C4** | -0.05 (0.31) | 0.87 | 0.10 (0.29) | 0.72 |
| **C4-OH** | -0.02 (0.28) | 0.92 | 0.27 (0.26) | 0.31 |
| **C5** | -0.21 (0.35) | 0.54 | 0.18 (0.34) | 0.59 |
| **C6** | -0.23 (0.34) | 0.51 | 0.13 (0.31) | 0.68 |
| **C9** | 0.11 (0.37) | 0.77 | 0.67 (0.36) | 0.06 |
| **C10** | 0.02 (0.28) | 0.95 | 0.08 (0.25) | 0.75 |
| **C14:1** | 0.03 (0.44) | 0.95 | 0.09 (0.41) | 0.82 |
| **C16** | 0.15 (0.50) | 0.77 | 0.70 (0.48) | 0.14 |
| **C18** | -0.26 (0.39) | 0.51 | 0.64 (0.38) | 0.09 |
| **C18:1** | -0.92 (0.46) | 0.05 | -0.21 (0.40) | 0.60 |
| **C18:2** | -0.13 (0.40) | 0.74 | 0.08 (0.37) | 0.84 |
| **Supplemental Table S8. Acylcarnitine levels according to response and remission status at M6.** Linear regression adjusted for age, gender, BMI, total blood cholesterol, glycemia and antidepressant class were performed – Acylcarnitine concentrations were log2 transformed – M6: At 6 months – SE: Standard Error – Response was a decrease of at least 50% from baseline in the HDRS score – Remission was a HDRS score lower or equal to 7 – The absence of Bold P-value indicates the absence of significance after Bonferroni corrections. | | | | |

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| **Supplemental Figure S1. Simplified representation of roles of acylcarnitines in fatty acid β-oxidation.** Carnitines allow the carrier of medium and long chain fatty acids (acyl- moieties) into the mitochondrial matrix thought its acylcarnitine form. In case of deficiency of acyl-CoA (for example, in increased fatty acid β-oxidation), acylcarnitines provide acyl- moieties to coenzyme A (CoA) to reconstitute acyl-CoA and releases the L-carnitine. In case of excess of acyl-CoA (for example in decreased fatty acid β-oxidation), L-carnitine retrieves the acyl moieties to constitute acylcarnitines and releases CoA. CPT: Carnitine Palmitoyltransferase. CAT: Carnitine Acetyltransferase. TCA: Tricarboxylic acid cycle. The black font metabolites were evaluated in this work. The grey font metabolites were not evaluated in the present study. |

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| **Supplemental Figure S2. Receiver operating characteristic curves for acylcarnitines with significant differences between healthy controls and depressed patients.** ROC: Receiver operating characteristic – AUC: Aera under the curve – Metabolite abbreviations are defined in Table 2. |

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| **Supplemental Figure S3. Correlation plot of acylcarnitines in healthy controls.** Blue represents positive correlations and red represents negative correlations – Acylcarnitine concentrations were log2 transformed – The first cluster (C3, C4, C4-OH, C5) was short chain acylcarnitines – The second cluster (C6, C9, C10, C14:1, C16, C18, C18:1, C18:2) was medium and long chain acylcarnitines –Metabolite abbreviations are defined in Table 2. |