Table S1. The *Solanum tuberosum* L. metabolites of samples irrigated with treated and untreated AMD. The retention times (min), compounds name, and accurate masses (m/z).

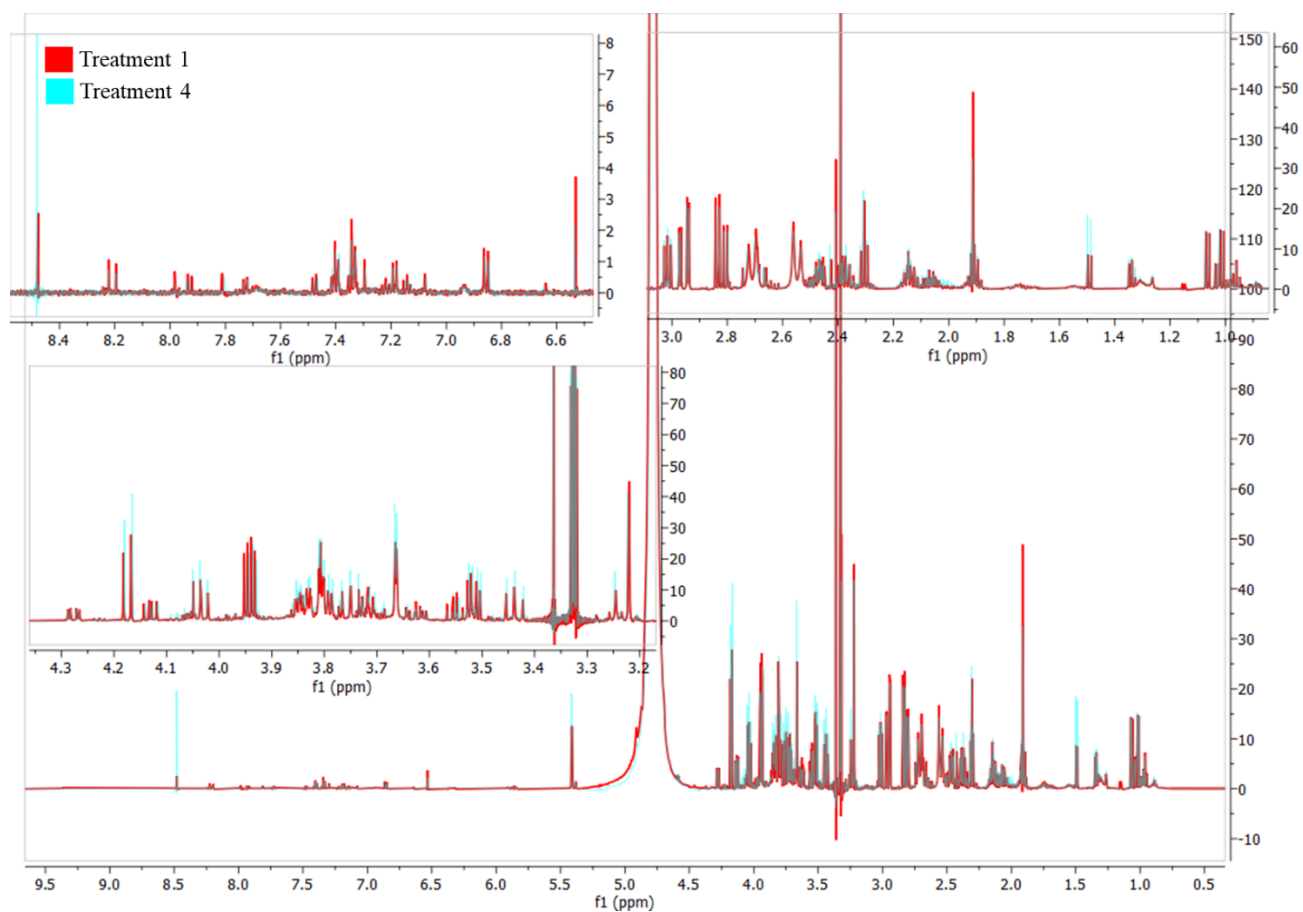| Peaks | Compound Name | Molecular formula | $r_T$ (min) | Accurate mass (m/z) | Literature |
|---|---|---|---|---|---|
| 1 | Calystegine A3 | $C_7H_{13}NO_3$ | 0.79 | 160.0969 | Petersson *et al.* 2013 |
| 2 | Quinic acid | $C_7H_{12}O_6$ | 0.95 | 193.0342 | Villegas and Kojima, 1985 |
| 3 | Kukoamine A | $C_{28}H_{42}N_4O_6$ | 4.21 | 531.3184 | Funayama *et al.* 1980 |
| 4 | Chlorogenic acid | $C_{16}H_{18}O_9$ | 4.89 | 355.1030 | Villegas and Kojima, 1985 |
| 5 | Caffeic acid | $C_9H_8O_4$ | 5.36 | 181.0497 | Mattila and Hellström, 2007 |
| 6 | Rutin | $C_{27}H_{30}O_{16}$ | 6.53 | 611.1616 | Oliveira *et al.* 2013 |
| 7 | Chaconine | $C_{45}H_{73}NO_{14}$ | 7.02 | 852.5094 | Duggan *et al.* 2020 |
| 8 | Solanidine | $C_{27}H_{43}NO$ | 7.06 | 398.3419 | Wang et al. 2020 |
| 9 | Solanine | $C_{45}H_{73}NO_{15}$ | 7.07 | 868.5056 | Duggan *et al.* 2020 |
| 10 | Azelaic acid | $C_9H_{16}O_4$ | 7.29 | 189.1129 | Martins *et al.* 2016 |
| 11 | Limonene | $C_{10}H_{16}$ | 10.39 | 137.1325 | Schieberle *et al.* 1987 |
| 12 | Oleamide | $C_{18}H_{35}NO$ | 11.44 | 282.2788 | Cravatt *et al.* 1996 |
| 13 | Linolenic acid | $C_{18}H_{30}O_2$ | 11.61 | 281.2476 | Alexandri *et al.* 2012 |

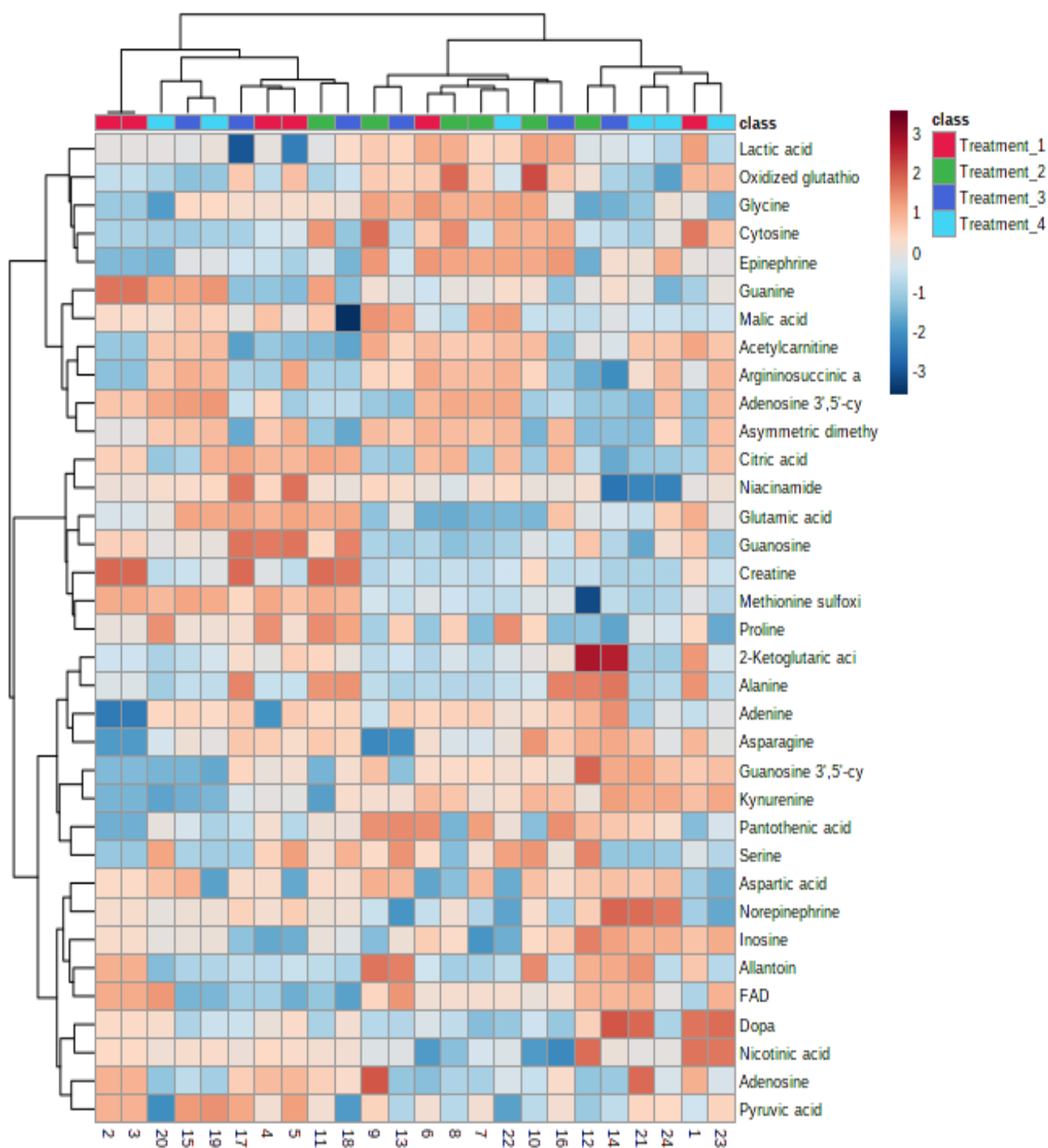Figure S1. $^1$H NMR spectra (superimposed) of *Solanum tuberosum* L. irrigated with treatment 1 and 4.

Figure S2. The heatmap for FA: AMD treatments on *Solanum tuberosum* L. samples primary metabolites identified from LC-MS/MS (Liquid Chromatography with Tandem Mass Spectrometry) triple quadrupole using unsupervised hierarchical clustering. The row represents the primary metabolites and the column represents samples irrigated with FA: AMD treatments.
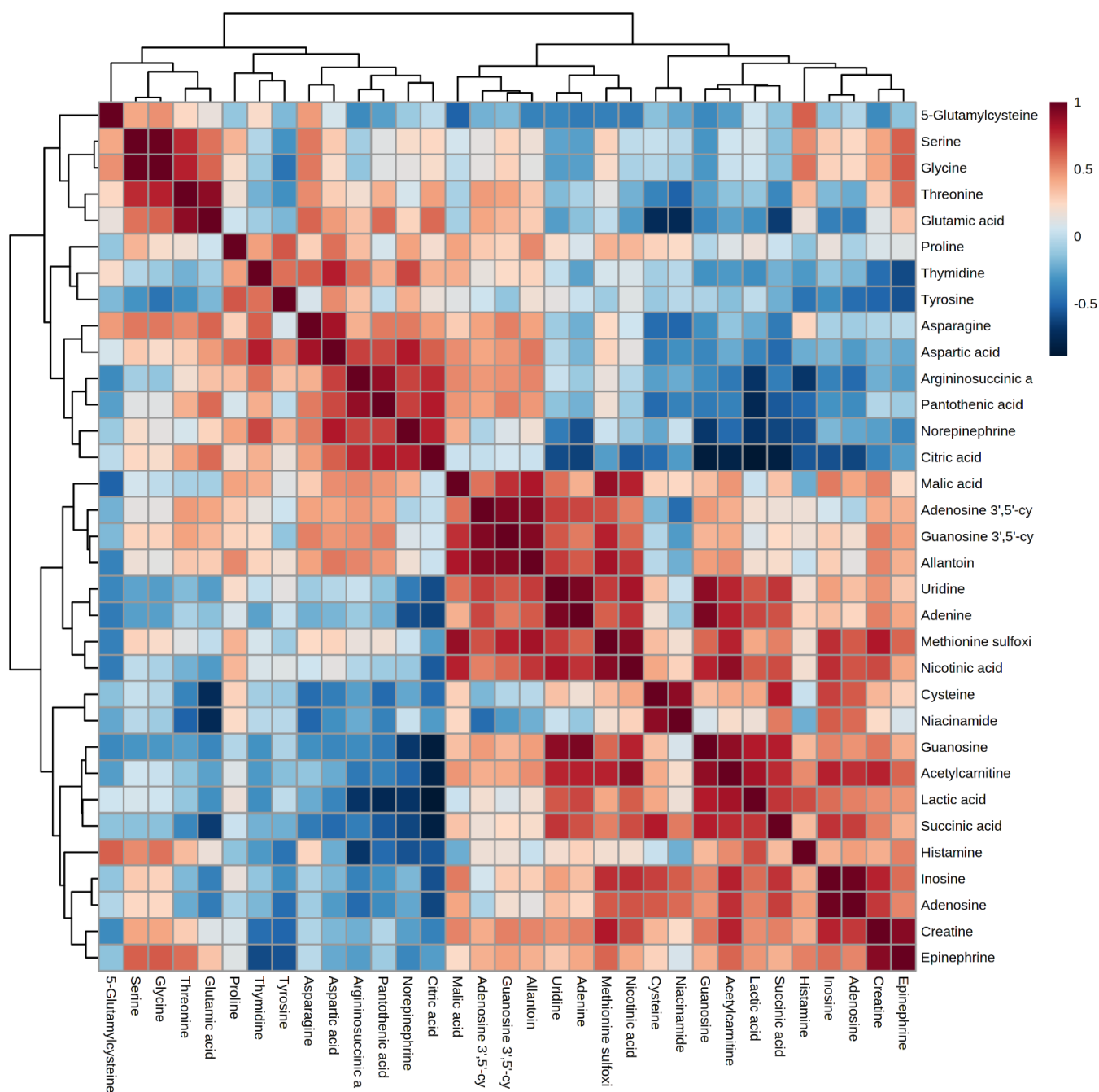
Figure S3. A correlation heatmap produced by MetaboAnalyst for *Solanum tuberosum* L. samples irrigated with treated and untreated AMD during the growing season. Red squares in the heatmap indicate increased excretion, while blue squares indicate decreased excretion.