Supplementary Table. Significant metabolomic enriched pathways (FDR < 0.05) for plasma metabolome from the first farm.

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| --- | --- | --- | --- | --- | --- | --- |
| **Metabolomic pathway name** | **Matched**  **metabolite**  **ratio** | **Metabolite** | ***P*-value** | **-Log (*P*-value)** | **False discovery rate (FDR)** | **Pathway impact value** |
| Alanine, aspartate and glutamate metabolism | [12/28](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | N-Acetyl-L-aspartate, L-Aspartate, L-Asparagine, D-Aspartate, L-Glutamate, L-Glutamine, 2-Oxoglutaramate, (S)-1-Pyrroline-5-carboxylate, Citrate, Fumarate, Succinate and 2-Oxoglutarate | 5.96ⅹ10-6 | 5.23 | 4.77ⅹ10-4 | 0.67 |
| Arginine biosynthesis | [8/14](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | L-Glutamate, L-Arginine, L-Aspartate, L-Citrulline, L-Ornithine, L-Glutamine, 2-Oxoglutarate and Fumarate | 1.72ⅹ10-5 | 4.76 | 6.00ⅹ10-4 | 0.48 |
| Tryptophan metabolism | [14/41](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | L-Tryptophan, N-Acetylserotonin, 5-Hydroxyindoleacetate, 5-Hydroxy-L-tryptophan, 2-Oxoadipate, 3-Hydroxyanthranilate, L-Kynurenine, Indole-3-acetaldehyde, Indolepyruvate, 6-Hydroxymelatonin, 5-Methoxyindoleacetate, Anthranilate, Indole-3-acetate and N-Methyltryptamine | 2.25ⅹ10-5 | 4.65 | 6.00ⅹ10-4 | 0.49 |
| Arginine and proline metabolism | [11/36](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | L-Arginine, Guanidinoacetate, Creatine, Spermidine, trans-3-Hydroxy-L-proline, Hydroxyproline, L-Proline, L-Glutamate, L-Ornithine, 4-Acetamidobutanoate and (S)-1-Pyrroline-5-carboxylate | 5.44ⅹ10-4 | 3.26 | 9.97ⅹ10-3 | 0.46 |
| beta-Alanine metabolism | [8/21](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | beta-Alanine, L-Aspartate, 3-Ureidopropionate, 5,6-Dihydrouracil, Carnosine, Uracil, L-Histidine and Spermidine | 6.23ⅹ10-4 | 3.21 | 9.97ⅹ10-3 | 0.62 |
| Pyrimidine metabolism | [11/38](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | L-Glutamine, (S)-Dihydroorotate, Uridine, 5,6-Dihydrouracil, 3-Ureidopropionate, Cytidine, dTMP, Thymidine, Thymine, Uracil and beta-Alanine | 9.09ⅹ10-4 | 3.04 | 1.21ⅹ10-2 | 0.29 |
| Glycine, serine and threonine metabolism | [10/34](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | L-Serine, Choline, Betaine, Guanidinoacetate, Glycine, L-Threonine, D-Glycerate, Creatine, L-Allothreonine and 5-Aminolevulinate | 1.37ⅹ10-3 | 2.86 | 1.56ⅹ10-2 | 0.61 |
| Pantothenate and CoA biosynthesis | [7/20](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | Pantothenate, 3-Ureidopropionate, 5,6-Dihydrouracil, L-Valine, L-Aspartate, beta-Alanine and Uracil | 2.46ⅹ10-3 | 2.61 | 2.46ⅹ10-2 | 0.12 |
| Valine, leucine and isoleucine biosynthesis | [4/8](https://new.metaboanalyst.ca/Secure/pathway/PathResultView.xhtml) | L-Threonine, L-Leucine, L-Isoleucine and L-Valine | 5.24ⅹ10-3 | 2.28 | 4.66ⅹ10-2 | 0.00 |