**S2 Table. Partial correlation coefficients.** Calculated between all pairs of amino acids using age and experimental effects as covariates. Significant correlations are marked with \*\* <0.01 and \* <0.05. The strongest correlation (between proline and citrulline) is marked with borders.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Alanine | Arginine | Asparagine | Aspartic Acid | Citrulline | Cystine | Glutamic Acid | Glutamine | Glycine | Histidine | Isoleucine | Leucine | Lysine | Methionine | Ornithine | Phenylalanine | Proline | Serine | Taurine | Threonine | Tryptophane | Tyrosine | Valine |
| Alanine | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Arginine | ,168\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Asparagine | ,619\*\* | 0,082 | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Aspartic Acid | ,257\*\* | 0,057 | ,287\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Citrulline | ,442\*\* | ,210\*\* | ,280\*\* | 0,093 | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cystine | ,158\*\* | ,285\*\* | 0,106 | -0,038 | ,123\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Glutamic Acid | ,222\*\* | -0,017 | ,160\*\* | ,716\*\* | 0,034 | -0,077 | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Glutamine | ,326\*\* | ,256\*\* | ,441\*\* | -,190\*\* | ,266\*\* | ,230\*\* | -,404\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Glycine | ,544\*\* | ,139\* | ,503\*\* | ,217\*\* | ,252\*\* | ,145\* | ,217\*\* | ,171\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Histidine | ,493\*\* | 0,080 | ,685\*\* | ,342\*\* | ,227\*\* | 0,057 | ,255\*\* | ,341\*\* | ,260\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Isoleucine | ,201\*\* | ,144\* | ,243\*\* | ,354\*\* | ,177\*\* | 0,005 | ,291\*\* | -0,030 | 0,029 | ,354\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |  |
| Leucine | ,176\*\* | 0,050 | ,314\*\* | ,393\*\* | ,142\* | -0,033 | ,319\*\* | -0,065 | 0,047 | ,470\*\* | ,892\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |  |
| Lysine | ,473\*\* | ,223\*\* | ,548\*\* | ,317\*\* | ,357\*\* | ,216\*\* | ,195\*\* | ,233\*\* | ,336\*\* | ,576\*\* | ,375\*\* | ,486\*\* | 1,000 |  |  |  |  |  |  |  |  |  |  |
| Methionine | ,612\*\* | ,339\*\* | ,621\*\* | 0,090 | ,364\*\* | ,218\*\* | -0,043 | ,455\*\* | ,425\*\* | ,517\*\* | ,330\*\* | ,326\*\* | ,562\*\* | 1,000 |  |  |  |  |  |  |  |  |  |
| Ornithine | ,537\*\* | -,215\*\* | ,610\*\* | ,354\*\* | ,313\*\* | -0,033 | ,286\*\* | ,203\*\* | ,506\*\* | ,478\*\* | ,235\*\* | ,357\*\* | ,558\*\* | ,400\*\* | 1,000 |  |  |  |  |  |  |  |  |
| Phenylalanine | ,347\*\* | 0,103 | ,463\*\* | ,446\*\* | ,152\* | 0,025 | ,280\*\* | 0,056 | ,213\*\* | ,566\*\* | ,613\*\* | ,727\*\* | ,514\*\* | ,511\*\* | ,409\*\* | 1,000 |  |  |  |  |  |  |  |
| Proline | ,565\*\* | ,215\*\* | ,383\*\* | ,120\* | ,910\*\* | ,170\*\* | 0,071 | ,324\*\* | ,283\*\* | ,352\*\* | ,188\*\* | ,169\*\* | ,398\*\* | ,472\*\* | ,397\*\* | ,248\*\* | 1,000 |  |  |  |  |  |  |
| Serine | ,489\*\* | ,120\* | ,665\*\* | ,370\*\* | ,268\*\* | 0,057 | ,318\*\* | ,268\*\* | ,628\*\* | ,499\*\* | ,210\*\* | ,222\*\* | ,445\*\* | ,425\*\* | ,508\*\* | ,287\*\* | ,318\*\* | 1,000 |  |  |  |  |  |
| Taurine | ,281\*\* | 0,115 | ,307\*\* | ,518\*\* | 0,042 | -0,038 | ,452\*\* | 0,015 | ,185\*\* | ,334\*\* | ,339\*\* | ,430\*\* | ,298\*\* | ,310\*\* | ,268\*\* | ,389\*\* | 0,113 | ,268\*\* | 1,000 |  |  |  |  |
| Threonine | ,402\*\* | ,214\*\* | ,397\*\* | 0,035 | ,327\*\* | ,132\* | 0,104 | ,182\*\* | ,396\*\* | ,288\*\* | ,126\* | 0,084 | ,371\*\* | ,415\*\* | ,225\*\* | 0,086 | ,358\*\* | ,539\*\* | 0,017 | 1,000 |  |  |  |
| Tryptophan | ,260\*\* | 0,048 | ,295\*\* | -0,043 | ,127\* | ,163\*\* | -0,053 | 0,015 | ,173\*\* | ,269\*\* | ,198\*\* | ,245\*\* | ,356\*\* | ,436\*\* | ,271\*\* | ,392\*\* | ,180\*\* | ,153\* | 0,008 | ,242\*\* | 1,000 |  |  |
| Tyrosine | ,484\*\* | ,147\* | ,406\*\* | ,160\*\* | ,389\*\* | 0,099 | 0,107 | ,233\*\* | ,309\*\* | ,339\*\* | ,354\*\* | ,382\*\* | ,441\*\* | ,532\*\* | ,449\*\* | ,469\*\* | ,434\*\* | ,332\*\* | ,153\* | ,260\*\* | ,365\*\* | 1,000 |  |
| Valine | ,138\* | 0,082 | ,209\*\* | ,247\*\* | ,238\*\* | 0,038 | ,159\*\* | -0,037 | -0,032 | ,390\*\* | ,789\*\* | ,840\*\* | ,492\*\* | ,273\*\* | ,253\*\* | ,576\*\* | ,260\*\* | ,155\* | ,211\*\* | ,196\*\* | ,330\*\* | ,395\*\* | 1,000 |

\*\* - Correlation is significant at 0.01 level, \* - Correlation is significant at 0.05 level