**Table S2**

Amino acid composition of ingredients (%; dry matter).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Amino acid | Amount in | | | | | | | |
| Provided by 5% fish meal | Provided by 15% rapeseed meal | Provided by 17% soybean meal | Provided by 35.75% wheat flour | Provided by 5% rice bran | Total | Additive amount | 33% whole body protein |
| EAAa | | | | | | | | |
| Lysine | 0.25 | 0.34 | 0.53 | 0.10 | 0.03 | 1.26 | \* | 2.00 |
| Methionine | 0.09 | 0.12 | 0.11 | 0.07 | 0.01 | 0.42 | 0.43 | 0.85 |
| Threonine | 0.14 | 0.27 | 0.34 | 0.12 | 0.03 | 0.89 | 0.41 | 1.30 |
| Histidine | 0.08 | 0.16 | 0.23 | 0.10 | 0.02 | 0.59 | 0.39 | 0.97 |
| Isoleucine | 0.14 | 0.25 | 0.41 | 0.16 | 0.03 | 0.98 | 0.50 | 1.48 |
| Arginine | 0.20 | 0.37 | 0.63 | 0.18 | 0.06 | 1.45 | 0.36 | 1.81 |
| Leucine | 0.24 | 0.43 | 0.67 | 0.31 | 0.05 | 1.71 | 0.97 | 2.67 |
| Phenylalanine | 0.13 | 0.25 | 0.45 | 0.22 | 0.03 | 1.08 | 0.39 | 1.48 |
| Valine | 0.16 | 0.32 | 0.42 | 0.19 | 0.04 | 1.13 | 0.57 | 1.69 |
| Tryptophan | 0.04 | 0.09 | 0.12 | 0.05 | 0.01 | 0.30 | 0.08 | 0.37 |
| NEAAb | | | | | | | | |
| Aspartic acid | 0.31 | 0.43 | 1.00 | 0.20 | 0.07 | 2.00 | 1.23 | 3.24 |
| Glycine | 0.24 | 0.32 | 0.38 | 0.17 | 0.04 | 1.14 | 1.38 | 2.52 |
| Gulmatic acid | 0.44 | 1.05 | 1.57 | 1.45 | 0.10 | 4.62 | 0.21 | 4.83 |
| Serine | 0.13 | 0.26 | 0.44 | 0.21 | 0.03 | 1.08 | 0.00 | 0.89 |
| Alanine | 0.22 | 0.27 | 0.38 | 0.14 | 0.04 | 1.05 | 1.02 | 2.08 |
| Cystine | 0.03 | 0.15 | 0.12 | 0.10 | 0.02 | 0.42 | 0.00 | 0.35 |
| Proline | 0.15 | 0.39 | 0.44 | 0.52 | 0.03 | 1.53 | 0.71 | 2.24 |

a EAA, essential amino acid.

b NEAA, non-essential amino acid.