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| **Supplementary Table 1.** Total protein and indispensable amino acid concentration of high protein food products (Source: USDA Food Composition Database1). | | | | | | | | | | | | | |
| Product2 | | NDB No. | Total Protein3 (g) | Tryptophan (mg) | Threonine (mg) | Lysine (mg) | Methionine (mg) | Phenylalanine (mg) | Histidine (mg) | Isoleucine (mg) | Leucine (mg) | Valine (mg) | Sum4 (g) |
| Meat, raw/unprepared unless noted otherwise | |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Beef eye of round (*semitendinosus)* | 23330 | 23.27 | 260 | 1097 | 2229 | 630 | 933 | 872 | 1084 | 2006 | 1163 | 10.27 |
|  | Beef ribeye (*longissimus thoracis*) | 13095 | 17.51 | 196 | 765 | 1457 | 448 | 684 | 600 | 787 | 1384 | 852 | 7.17 |
|  | Beef strip loin (*longissimus lumborum*) | 13909 | 20.61 | 135 | 823 | 1742 | 537 | 814 | 658 | 938 | 1639 | 1022 | 8.31 |
|  | Beef tenderloin (*psoas major*) | 13917 | 19.61 | 129 | 783 | 1657 | 511 | 774 | 626 | 892 | 1560 | 973 | 7.91 |
|  | Beef top sirloin (*gluteus medius et al.)* | 13929 | 20.30 | 133 | 811 | 1716 | 529 | 802 | 648 | 924 | 1615 | 1007 | 8.19 |
|  | Beef, ground 80% lean, 20% fat | 23572 | 17.17 | 87 | 665 | 1423 | 442 | 670 | 558 | 759 | 1334 | 844 | 6.79 |
|  | Beef, ground 90% lean, 10% fat | 23562 | 20.00 | 102 | 775 | 1658 | 515 | 781 | 650 | 885 | 1560 | 983 | 7.91 |
|  | Beef, ground 93% lean, 7% fat | 23472 | 20.85 | 106 | 807 | 1728 | 537 | 814 | 678 | 922 | 1627 | 1025 | 8.24 |
|  | Beef, ground 97% lean, 3% fat | 23477 | 21.98 | 112 | 851 | 1882 | 566 | 0.858 | 715 | 972 | 1715 | 1081 | 8.69 |
|  | Chicken breast (*pectoralis major*) | 5062 | 22.50 | 283 | 1009 | 2163 | 585 | 908 | 839 | 1104 | 1861 | 1165 | 9.92 |
|  | Chicken thigh (*iliotibialis et al.*) | 5091 | 16.52 | 167 | 735 | 1448 | 438 | 632 | 465 | 731 | 1318 | 764 | 6.70 |
|  | Lamb leg (*biceps femoris et al)* | 17011 | 17.91 | 209 | 767 | 1582 | 460 | 729 | 567 | 864 | 1393 | 967 | 7.54 |
|  | Lamb loin (*longissimus lumborum*) | 17023 | 16.32 | 191 | 699 | 1441 | 419 | 664 | 517 | 787 | 1270 | 881 | 6.87 |
|  | Pork ham (*biceps femoris et al.)* | 10008 | 17.43 | 208 | 776 | 1550 | 444 | 689 | 659 | 787 | 1376 | 931 | 7.42 |
|  | Pork loin (*longissimus lumborum*) | 10020 | 19.74 | 244 | 891 | 1766 | 514 | 785 | 770 | 910 | 1572 | 1064 | 8.52 |
|  | Pork, ground 84% lean, 16% fat | 10972 | 17.99 | 232 | 763 | 1547 | 480 | 766 | 711 | 822 | 1435 | 905 | 7.66 |
|  | Pork, ground 96% lean, 4% fat | 10973 | 21.10 | 272 | 895 | 1815 | 564 | 898 | 834 | 964 | 1683 | 1061 | 8.99 |
|  | Turkey breast (*pectoralis major*) | 5191 | 21.89 | 242 | 957 | 1996 | 616 | 857 | 660 | 1099 | 1704 | 1141 | 9.27 |
|  | Turkey thigh (*iliotibialis et al*.) | 5717 | 20.60 | 254 | 897 | 2123 | 575 | 746 | 631 | 739 | 1705 | 776 | 8.45 |
|  | Turkey, ground, 93% lean, 15% fat | 5665 | 18.73 | 213 | 859 | 1675 | 551 | 729 | 554 | 838 | 1545 | 868 | 7.83 |
| Fish, raw/unprepared | |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Catfish, wild channel | 15010 | 16.38 | 183 | 718 | 1504 | 485 | 639 | 482 | 755 | 1331 | 844 | 6.94 |
|  | Halibut, Atlantic | 15036 | 18.56 | 233 | 912 | 1911 | 616 | 813 | 613 | 959 | 1692 | 1072 | 8.82 |
|  | Pollock, Atlantic | 15065 | 19.44 | 218 | 852 | 1786 | 576 | 759 | 572 | 896 | 1580 | 1002 | 8.24 |
|  | Salmon, Atlantic | 15076 | 19.84 | 222 | 870 | 1822 | 587 | 775 | 584 | 914 | 1613 | 1022 | 8.41 |
|  | Tilapia | 15261 | 20.08 | 210 | 950 | 1810 | 593 | 810 | 470 | 930 | 1603 | 970 | 8.35 |
|  | Tuna, yellowfin | 15127 | 24.40 | 262 | 1025 | 2147 | 692 | 913 | 688 | 1077 | 1900 | 1204 | 9.91 |
| Non-meat, raw/unprepared unless noted otherwise | |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Chicken eggs, whole | 1123 | 12.56 | 167 | 556 | 912 | 380 | 680 | 309 | 671 | 1086 | 858 | 5.62 |
|  | Milk, 2% milkfat with added vitamin A and D | 1080 | 3.48 | 49 | 157 | 276 | 87 | 168 | 94 | 211 | 341 | N/A | 1.38 |
|  | Lentils, sprouted | 11248 | 8.96 | N/A | 328 | 712 | 105 | 442 | 257 | 326 | 628 | 399 | 3.20 |
|  | Broccoli, heads | 11090 | 2.82 | 33 | 88 | 135 | 38 | 117 | 59 | 79 | 129 | 125 | 0.80 |
|  | Green peas | 11304 | 5.42 | 37 | 203 | 317 | 82 | 200 | 107 | 195 | 323 | 235 | 1.70 |
|  | Spinach | 11457 | 2.86 | 39 | 122 | 174 | 53 | 129 | 64 | 147 | 223 | 161 | 1.11 |
|  | Black beans, mature | 16014 | 21.60 | 256 | 909 | 1483 | 325 | 1168 | 601 | 954 | 1725 | 1130 | 8.55 |
|  | Pinto beans, mature | 11653 | 5.25 | 55 | 220 | 299 | 55 | 265 | 147 | 233 | 377 | 270 | 1.92 |
|  | Lima, beans, immature | 11031 | 6.84 | 90 | 290 | 452 | 68 | 337 | 232 | 440 | 538 | 427 | 2.87 |
|  | Kidney beans, mature | 11029 | 4.20 | 44 | 176 | 239 | 44 | 212 | 118 | 186 | 302 | 216 | 1.54 |
|  | Great northern beans, mature | 16024 | 21.86 | 259 | 920 | 1500 | 329 | 1182 | 608 | 965 | 1745 | 1144 | 8.65 |
|  | Tofu, firm, prepared with CaSO4 and MgCl2 | 16126 | 9.04 | 123 | 411 | 462 | 110 | 437 | 225 | 444 | 728 | 455 | 3.40 |
|  | Tofu, soft, prepared with CaSO4 and MgCl2 | 16127 | 7.17 | 102 | 268 | 431 | 84 | 319 | 191 | 324 | 498 | 331 | 2.55 |
|  | Peanuts | 16087 | 25.80 | 250 | 883 | 926 | 317 | 1377 | 652 | 907 | 1672 | 1082 | 8.07 |
|  | Almonds | 12061 | 21.15 | 211 | 601 | 568 | 157 | 1132 | 539 | 751 | 1473 | 855 | 6.29 |
|  | Cashews | 12087 | 18.22 | 287 | 688 | 928 | 362 | 951 | 456 | 789 | 1472 | 1094 | 7.03 |
| 1The USDA Food Composition Database states: The values for protein were calculated from the amount of total nitrogen (N) in the food, using the specific conversion factors recommended by Jones (1941) for most food items. The analytical methods used to determine the nitrogen content of foods are AOAC 968.06 (4.2.04), 992.15 (39.1.16) and 990.03 (combustion) and 991.20 (Kjeldahl) (AOAC, 2012). The specific factor applied to each food item is provided in the N-Factor field in the Food Description file. The general factor of 6.25 is used to calculate protein in items that do not have a specific factor. Amino acid data for a class or species of food are aggregated to yield a set of values that serve as the pattern for calculating the amino acid profile of other similar foods. The amino acid values for the pattern are expressed on a per-gram-of nitrogen basis. Amino acids are extracted in three groups—tryptophan, sulfur-containing amino acids (methionine and cystine), and all others. Tryptophan is determined by alkaline hydrolysis/HPLC (AOAC 988.15), methionine and cystine by performic oxidation/HPLC (AOAC 994.12) and all others by acid hydrolysis/HPLC (AOAC 982.30). Hydroxyproline in meats has been determined using a colorimetric method (AOAC 990.26) (AOAC, 2012). | | | | | | | | | | | | | |
| 2All products are standardized to a 100 g serving. | | | | | | | | | | | | | |
| 3Protein amount is as reported by USDA Food Composition Database. | | | | | | | | | | | | | |
| 4Sum = the total amount of reported indispensable amino acids. | | | | | | | | | | | | | |

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| **Supplementary Table 2.** Dispensable amino acid concentration of high protein food products (Source: USDA Food Composition Database1). | | | | | | | | | | | | |
| Product2 | | NDB No. | Cystine (mg) | Tyrosine (mg) | Arginine (mg) | Alanine (mg) | Aspartic acid (mg) | Glutamic acid (mg) | Glycine (mg) | Proline3 (mg) | Serine (mg) | Sum4 (g) |
| Meat, raw/unprepared unless noted otherwise | |  |  |  |  |  |  |  |  |  |  |  |
|  | Beef eye of round (*semitendinosus)* | 23330 | 237 | 867 | 1585 | 1443 | 2267 | 3805 | 1145 | 1203 | 958 | 13.51 |
|  | Beef ribeye (*longissimus thoracis*) | 13095 | 196 | 588 | 1107 | 1056 | 1600 | 2631 | 955 | 773 | 670 | 9.58 |
|  | Beef strip loin (*longissimus lumborum*) | 13909 | 266 | 657 | 1333 | 1253 | 1877 | 3094 | 1255 | 1198 | 812 | 11.75 |
|  | Beef tenderloin (*psoas major*) | 13917 | 253 | 625 | 1268 | 1192 | 1786 | 2943 | 1194 | 1124 | 772 | 11.16 |
|  | Beef top sirloin (*gluteus medius et al.)* | 13929 | 262 | 647 | 1313 | 1234 | 1849 | 3048 | 1236 | 1181 | 800 | 11.57 |
|  | Beef, ground 80% lean, 20% fat | 23572 | 177 | 528 | 1118 | 1076 | 1547 | 2575 | 1166 | 1147 | 688 | 10.02 |
|  | Beef, ground 90% lean, 10% fat | 23562 | 206 | 616 | 1302 | 1253 | 1802 | 3000 | 1358 | 1292 | 801 | 11.63 |
|  | Beef, ground 93% lean, 7% fat | 23472 | 215 | 642 | 1358 | 1037 | 1878 | 3128 | 1416 | 1353 | 835 | 12.11 |
|  | Beef, ground 97% lean, 3% fat | 23477 | 226 | 677 | 1432 | 1378 | 1981 | 3298 | 1493 | 1393 | 881 | 12.76 |
|  | Chicken breast (*pectoralis major*) | 5062 | 236 | 810 | 1521 | 1313 | 2116 | 3333 | 996 | 715 | 858 | 11.90 |
|  | Chicken thigh (*iliotibialis et al.*) | 5091 | 183 | 579 | 1157 | 1015 | 1554 | 2571 | 1005 | 773 | 675 | 9.51 |
|  | Lamb leg (*biceps femoris et al)* | 17011 | 214 | 602 | 1064 | 1077 | 1577 | 2600 | 875 | 751 | 666 | 9.43 |
|  | Lamb loin (*longissimus lumborum*) | 17023 | 195 | 549 | 970 | 982 | 1437 | 2369 | 797 | 685 | 607 | 8.59 |
|  | Pork ham (*biceps femoris et al.)* | 10008 | 216 | 583 | 1120 | 1032 | 1584 | 2636 | 992 | 790 | 720 | 9.67 |
|  | Pork loin (*longissimus lumborum*) | 10020 | 248 | 676 | 1245 | 1158 | 1814 | 3044 | 1019 | 838 | 815 | 10.86 |
|  | Pork, ground 84% lean, 16% fat | 10972 | 208 | 762 | 1173 | 1060 | 1620 | 2658 | 1005 | 1051 | 722 | 10.26 |
|  | Pork, ground 96% lean, 4% fat | 10973 | 244 | 893 | 1376 | 1243 | 1900 | 3118 | 1179 | 1232 | 846 | 12.03 |
|  | Turkey breast (*pectoralis major*) | 5191 | 240 | 832 | 1541 | 1392 | 2111 | 3497 | 1299 | 1011 | 966 | 12.89 |
|  | Turkey thigh (*iliotibialis et al*.) | 5717 | 197 | 707 | 1311 | 1243 | 1945 | 3161 | 962 | 995 | 872 | 11.39 |
|  | Turkey, ground, 93% lean, 15% fat | 5665 | 198 | 663 | 1359 | 1166 | 1808 | 2997 | 1024 | 1028 | 795 | 11.04 |
| Fish, raw/unprepared | |  |  |  |  |  |  |  |  |  |  |  |
|  | Catfish, wild channel | 15010 | 176 | 553 | 980 | 991 | 1677 | 2445 | 786 | 579 | 668 | 8.86 |
|  | Halibut, Atlantic | 15036 | 223 | 703 | 1245 | 1259 | 2131 | 3107 | 999 | 736 | 849 | 11.25 |
|  | Pollock, Atlantic | 15065 | 208 | 656 | 1164 | 1176 | 1991 | 2903 | 933 | 688 | 793 | 10.51 |
|  | Salmon, Atlantic | 15076 | 213 | 670 | 1187 | 1200 | 2032 | 2962 | 952 | 702 | 809 | 10.73 |
|  | Tilapia | 15261 | 220 | 680 | 1277 | 1220 | 2297 | 3213 | 1043 | 757 | 813 | 11.52 |
|  | Tuna, yellowfin | 15127 | 251 | 789 | 1399 | 1414 | 2394 | 3489 | 1122 | 827 | 954 | 12.64 |
| Non-meat, raw/unprepared unless noted otherwise | |  |  |  |  |  |  |  |  |  |  |  |
|  | Chicken eggs, whole | 1123 | 272 | 499 | 820 | 735 | 1329 | 1673 | 432 | 512 | 971 | 7.24 |
|  | Milk, 2% milkfat with added vitamin A and D | 1080 | 32 | 168 | 126 | 120 | 264 | 729 | 74 | 337 | 189 | 2.04 |
|  | Lentils, sprouted | 11248 | 334 | 252 | 611 | 356 | 1433 | 1258 | 319 | 356 | 495 | 5.41 |
|  | Broccoli, heads | 11090 | 28 | 50 | 191 | 104 | 325 | 542 | 89 | 110 | 121 | 1.56 |
|  | Green peas | 11304 | 32 | 114 | 428 | 240 | 496 | 741 | 184 | 173 | 181 | 2.59 |
|  | Spinach | 11457 | 35 | 108 | 162 | 142 | 240 | 343 | 134 | 112 | 104 | 1.38 |
|  | Black beans, mature | 16014 | 235 | 608 | 1337 | 905 | 2613 | 3294 | 843 | 916 | 1175 | 11.93 |
|  | Pinto beans, mature | 11653 | 60 | 181 | 286 | 218 | 682 | 640 | 181 | 212 | 281 | 2.74 |
|  | Lima, beans, immature | 11031 | 83 | 220 | 458 | 260 | 735 | 881 | 274 | 102 | 427 | 3.44 |
|  | Kidney beans, mature | 11029 | 48 | 144 | 228 | 174 | 546 | 512 | 144 | 169 | 224 | 2.19 |
|  | Great northern beans, mature | 16024 | 238 | 615 | 1353 | 916 | 2644 | 3333 | 853 | 927 | 1189 | 12.07 |
|  | Tofu, firm, prepared with CaSO4 and MgCl2 | 16126 | 30 | 367 | 716 | 405 | 1066 | 1721 | 384 | 567 | 531 | 5.79 |
|  | Tofu, soft, prepared with CaSO4 and MgCl2 | 16127 | 91 | 219 | 436 | 268 | 724 | 1133 | 256 | 353 | 309 | 3.79 |
|  | Peanuts | 16087 | 331 | 1049 | 3085 | 1025 | 3146 | 5390 | 1554 | 1138 | 1271 | 17.99 |
|  | Almonds | 12061 | 215 | 450 | 2465 | 999 | 2639 | 6206 | 1429 | 969 | 912 | 16.28 |
|  | Cashews | 12087 | 393 | 508 | 2123 | 837 | 1795 | 4506 | 937 | 812 | 1079 | 12.99 |
| 1The USDA Food Composition Database states: The values for protein were calculated from the amount of total nitrogen (N) in the food, using the specific conversion factors recommended by Jones (1941) for most food items. The analytical methods used to determine the nitrogen content of foods are AOAC 968.06 (4.2.04), 992.15 (39.1.16) and 990.03 (combustion) and 991.20 (Kjeldahl) (AOAC, 2012). The specific factor applied to each food item is provided in the N-Factor field in the Food Description file. The general factor of 6.25 is used to calculate protein in items that do not have a specific factor. Amino acid data for a class or species of food are aggregated to yield a set of values that serve as the pattern for calculating the amino acid profile of other similar foods. The amino acid values for the pattern are expressed on a per-gram-of nitrogen basis. Amino acids are extracted in three groups—tryptophan, sulfur-containing amino acids (methionine and cystine), and all others. Tryptophan is determined by alkaline hydrolysis/HPLC (AOAC 988.15), methionine and cystine by performic oxidation/HPLC (AOAC 994.12) and all others by acid hydrolysis/HPLC (AOAC 982.30). Hydroxyproline in meats has been determined using a colorimetric method (AOAC 990.26) (AOAC, 2012). | | | | | | | | | | | | |
| 2All products are standardized to a 100 g serving. | | | | | | | | | | | | |
| 3Proline amount includes hydroxyproline, if reported. | | | | | | | | | | | | |
| 4Sum = the total amount of reported dispensable amino acids. | | | | | | | | | | | | |