

Table S1 Amino acid score of ACs

	AC_1	AC_2	AC_4	AC_5	AC_6	AC_7	AC_8	AC_9	AC_11	AC_12
tryptophan	1.5 ± 0.2	1.3 ± 0.0	2.0 ± 0.0	1.9 ± 0.0	1.2 ± 0.2	1.8 ± 0.0	1.7 ± 0.2	1.4 ± 0.2	1.0 ± 0.2	1.2 ± 0.0
isoleucine	1.3 ± 0.1	1.2 ± 0.0	1.3 ± 0.0	1.5 ± 0.1	1.1 ± 0.0	1.2 ± 0.1	1.3 ± 0.0	1.2 ± 0.0	1.2 ± 0.1	1.5 ± 0.1
histidine	1.1 ± 0.4	0.8 ± 0.1	1.1 ± 0.1	1.1 ± 0.3	2.2 ± 0.0	0.9 ± 0.2	1.1 ± 0.1	1.0 ± 0.0	1.0 ± 0.3	1.0 ± 0.1
leucine	1.3 ± 0.1	1.2 ± 0.0	1.2 ± 0.0	1.3 ± 0.0	1.3 ± 0.0	1.1 ± 0.0	1.4 ± 0.1	1.2 ± 0.0	1.3 ± 0.0	1.2 ± 0.0
lysine	1.3 ± 0.0	1.0 ± 0.0	1.4 ± 0.0	1.3 ± 0.0	1.9 ± 0.0	0.9 ± 0.0	0.9 ± 0.0	1.0 ± 0.0	1.0 ± 0.0	0.8 ± 0.0
threonine	2.0 ± 0.1	1.8 ± 0.0	2.0 ± 0.0	2.2 ± 0.1	1.7 ± 0.1	1.8 ± 0.1	2.1 ± 0.1	1.9 ± 0.1	1.8 ± 0.0	2.0 ± 0.1
valine	0.9 ± 0.1	0.7 ± 0.1	0.9 ± 0.0	1.0 ± 0.1	0.7 ± 0.1	0.7 ± 0.0	0.8 ± 0.1	0.8 ± 0.1	0.7 ± 0.0	0.8 ± 0.0
SAA ^a	0.8 ± 0.0	0.8 ± 0.0	1.1 ± 0.0	1.0 ± 0.0	0.7 ± 0.0	1.0 ± 0.0	0.8 ± 0.0	0.7 ± 0.0	0.6 ± 0.0	0.6 ± 0.0
AAA ^b	1.6 ± 0.1	1.4 ± 0.0	1.5 ± 0.0	1.6 ± 0.0	1.5 ± 0.0	1.3 ± 0.0	1.5 ± 0.0	1.4 ± 0.1	1.4 ± 0.0	1.5 ± 0.0

^aSAA: methionine+cysteine.^bAAA: Phenylalanine + Tyrosine

Table S2 Amino acids of ACs

	AC_1	AC_2	AC_4	AC_5	AC_6	AC_7	AC_8	AC_9	AC_11	AC_12
	% crude protein									
cysteine	0.3 ± 0.0	0.2 ± 0.0	0.5 ± 0.1	0.4 ± 0.0	0.2 ± 0.0	0.4 ± 0.1	0.3 ± 0.0	0.2 ± 0.0	0.2 ± 0.0	0.3 ± 0.1
methionine	1.5 ± 0.1	1.6 ± 0.0	1.9 ± 0.0	1.7 ± 0.0	1.4 ± 0.1	1.7 ± 0.0	1.6 ± 0.0	1.4 ± 0.1	1.2 ± 0.1	1.0 ± 0.0
tryptophan	1.0 ± 0.1	0.8 ± 0.0	1.3 ± 0.0	1.3 ± 0.0	0.8 ± 0.1	1.2 ± 0.0	1.1 ± 0.1	0.9 ± 0.1	0.7 ± 0.1	0.8 ± 0.0
aspartic	14.2 ± 0.6	15.5 ± 0.1	14.4 ± 0.2	10.0 ± 0.4	12.0 ± 0.3	13.3 ± 0.2	14.1 ± 0.4	16.9 ± 0.2	16.8 ± 0.4	19.2 ± 0.5
glutamic	16.3 ± 0.5	15.5 ± 0.2	14.9 ± 0.0	17.7 ± 0.2	15.7 ± 0.4	21.6 ± 0.2	15.3 ± 0.3	15.2 ± 0.1	15.5 ± 0.2	16.3 ± 0.2
alanine	2.4 ± 0.3	4.3 ± 0.2	2.8 ± 0.1	2.5 ± 0.3	2.3 ± 0.3	6.5 ± 0.1	2.1 ± 0.0	4.2 ± 0.0	5.5 ± 0.3	2.9 ± 0.2
arginine	17.6 ± 2.1	20.6 ± 0.3	18.2 ± 0.1	18.5 ± 0.8	18.1 ± 0.9	17.3 ± 0.3	20.6 ± 1.7	19.0 ± 0.9	17.4 ± 0.5	19.4 ± 0.2
glycine	5.5 ± 0.3	5.8 ± 0.0	5.4 ± 0.2	5.6 ± 0.2	6.2 ± 0.2	4.6 ± 0.1	6.0 ± 0.3	5.7 ± 0.3	6.9 ± 0.2	4.8 ± 0.1
isoleucine	3.9 ± 0.3	3.6 ± 0.1	3.9 ± 0.1	4.6 ± 0.3	3.3 ± 0.0	3.7 ± 0.2	4.0 ± 0.0	3.7 ± 0.0	3.5 ± 0.3	4.4 ± 0.3
histidine	1.7 ± 0.6	1.2 ± 0.1	1.6 ± 0.1	1.6 ± 0.5	3.3 ± 0.0	1.4 ± 0.3	1.6 ± 0.2	1.5 ± 0.0	1.6 ± 0.4	1.5 ± 0.2
leucine	7.8 ± 0.3	7.3 ± 0.0	7.4 ± 0.0	8.0 ± 0.2	7.6 ± 0.0	6.3 ± 0.1	8.0 ± 0.3	7.2 ± 0.2	7.5 ± 0.2	7.0 ± 0.1
lysine	5.9 ± 0.1	4.3 ± 0.1	6.2 ± 0.1	6.0 ± 0.0	8.4 ± 0.0	4.2 ± 0.0	4.0 ± 0.0	4.7 ± 0.1	4.3 ± 0.0	3.8 ± 0.0
proline	3.1 ± 0.1	2.2 ± 0.1	2.7 ± 1.0	2.0 ± 0.3	4.4 ± 0.7	1.6 ± 0.2	2.7 ± 0.6	1.5 ± 0.4	2.2 ± 0.1	0.4 ± 0.0
serine	4.8 ± 0.1	4.9 ± 0.0	4.8 ± 0.0	5.0 ± 0.1	5.2 ± 0.0	4.2 ± 0.0	4.9 ± 0.1	4.8 ± 0.1	4.8 ± 0.0	4.5 ± 0.0
tyrosine	2.7 ± 0.1	2.2 ± 0.1	2.5 ± 0.0	2.4 ± 0.0	2.6 ± 0.0	2.1 ± 0.0	2.2 ± 0.0	2.4 ± 0.0	2.3 ± 0.1	2.4 ± 0.1
threonine	4.7 ± 0.3	4.1 ± 0.1	4.7 ± 0.1	5.2 ± 0.3	3.9 ± 0.2	4.1 ± 0.3	4.8 ± 0.2	4.4 ± 0.2	4.0 ± 0.0	4.6 ± 0.3
valine	3.3 ± 0.3	2.8 ± 0.3	3.5 ± 0.1	3.9 ± 0.2	2.8 ± 0.2	2.7 ± 0.0	3.3 ± 0.2	3.0 ± 0.2	2.6 ± 0.0	3.3 ± 0.1
phenylalanine	3.5 ± 0.2	3.1 ± 0.1	3.3 ± 0.1	3.7 ± 0.1	3.1 ± 0.1	2.9 ± 0.0	3.5 ± 0.0	3.0 ± 0.2	3.0 ± 0.1	3.3 ± 0.1