

**Table S1. Composition of amino acid mixture (5 mM)**

L-amino acid	Biological available nitrogen (mM)	Biological available nitrogen (%)
arginine	0.391	7.82
histidine	0.258	5.15
isoleucine	0.248	4.96
leucine	0.353	7.06
lysine	0.267	5.34
methionine	0.007	1.34
phenylalanine	0.153	3.05
threonine	0.296	5.92
tryptophan	0.038	0.76
valine	0.324	6.54
alanine	0.429	8.59
asparagine	0.391	7.82
aspartate	0.162	3.24
cysteine	0.006	0.11
glutamate	0.277	5.53
glutamine	0.553	11.07
glycine	0.305	6.11
proline	0.162	3.24
serine	0.267	5.34
tyrosine	0.067	1.34

Note the concentrations of amino acids in the mixture usually equals to nitrogen concentrations except that for arginine, histidine, asparagine, and glutamine, their concentrations in the mixture are 50% of nitrogen concentrations.

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Concentrations of each of the 20 L-amino acids in 5 mM amino acid mixture.