Table S1. Design of experiment for studying and optimizing the effect of mixing glycine, threonine, and glutamine in LB medium.

Run	Glycine (g/L)	Threonine (g/L)	Glutamine (g/L)	Run	Glycine (g/L)	Threonine (g/L)	Glutamine (g/L)
1	3	1.5	1.5	11	3	0	3
2	0	0	3	12	0	0	0
3	3	3	3	13	3	0	3
4	1.5	0	0	14	1.5	1.5	0
5	1.5	3	3	15	3	3	0
6	0	3	3	16	1.5	0	1.5
7	3	0	0	17	0	0	3
8	3	0	0	18	0	0	0
9	0	3	0	19	0	3	1.5
10	0.75	1.5	2.25	20	3	3	0

Table S2. Analysis of variance (ANOVA) for optimization of bio-CN production after mixing amino acids

Source	Sum of squares	df	Mean square	F value	p-value Prob > F	
Model	3.67	8	0.46	84.70	< 0.0001	significant
A-Glycine	0.21	1	0.21	39.28	< 0.0001	
B-Threonine	1.91	1	1.91	349.92	< 0.0001	
C-Glutamine	0.59	1	0.59	109.20	< 0.0001	
AB	0.02	1	0.02	4.36	0.0609	
AC	0.04	1	0.04	7.63	0.0185	
BC	0.26	1	0.26	48.08	< 0.0001	
B^2	0.16	1	0.16	29.81	0.0002	
C^2	0.02	1	0.02	3.69	0.0811	
Residual	0.06	11	0.01			
Lack of Fit	0.03	6	0.01	0.88	0.5664	not significant
Pure Error	0.03	5	0.01			
Cor Total	3.76	19				

Table S3. Analysis of variance (ANOVA) for bio-CN production in mixed amino acid medium

Source	Sum of squares	df	Mean square	F value	p-value Prob > F	
Model	5356.76	8	669.59	21.39	< 0.0001	significant
A-Glycine	3039.28	1	3039.28	97.08	< 0.0001	
B-Threonine	245.91	1	245.91	7.85	0.0172	
C-Glutamine	940.68	1	940.68	30.05	0.0002	
AB	141.74	1	141.74	4.53	0.0568	
AC	27.719	1	27.719	0.88	0.3669	
BC	254.45	1	254.45	8.13	0.0158	
A^2	157.95	1	157.95	5.04	0.0462	
ABC	163.87	1	163.87	5.23	0.0429	
Residual	344.36	11	31.30			
Lack of Fit	178.51	6	29.75	0.90	0.5589	not significant
Pure Error	165.85	5	33.17			
Cor Total	5701.12	19				