Supplementary Tables and Figure

Supplementary Table S1. Procedure for GMP purification

1. Sample of SWPP (~1 g)
2. Addition of 20 ml of water to make suspension
3. Heating in boiling water (98.5 °C) bath for 10 min to coagulate protein
4. Centrifugation at 27,000 × g and 20 °C
5. Supernatant + precipitate I
6. Adjustment of pH of supernatant to 4.6 to precipitate protein
7. Centrifugation at 27,000 × g and 20 °C
8. Supernatant + precipitate II
9. Adjustment of pH of supernatant to 3.0
10. Anion exchange chromatography on DEAE-Sephacel
11. Final product (GMP)

Supplementary Table S2. Amino acid composition of SWPP samples

	Sample No.1	Sample No.2	Sample No.3
Amino acid		mol%	
Asx	11.2†	11.5	8.6
Ser	7.6	7.9	11.1
Glx	15.5	15.9	14.9
Gly	3.1	3.3	3.5
His	1.6	1.6	2.0
Arg	2.2	2.0	3.6
Thr	8.4	8.7	8.7
Ala	7.0	6.7	6.0
Pro	6.6	6.5	7.7
Tyr	2.1	2.2	2.1
Val	6.8	6.9	6.8
Lys	8.5	7.8	6.3
Ile	6.3	6.6	6.4
Leu	10.4	10.1	9.2
Phe	2.6	2.6	3.1

†Analyzed in duplicate.

Supplementary Table S3. Amino acid composition of GMP purified from SWPP sample No. 1 without heat treatment

	GMP I (product obtained by the first chromatography)	GMP II (product obtained by re-chromatography of GMP I)
Amino acid	mol%	
Asx	8.6 ± 0.1†	8.5‡
Ser	12.3 ± 0.3	11.9
Glx	16.1 ± 0.0	15.7
Gly	2.1 ± 0.3	2.2
His	nd	nd
Arg	nd	nd
Thr	17.9 ± 0.3	18.2
Ala	7.5 ± 0.1	7.3
Pro	11.6 ± 0.1	11.6
Tyr	nd	1.2
Val	9.0 ± 0.3	9.1
Lys	4.7 ± 0.1	4.7
Ile	8.1 ± 0.2	8.3
Leu	1.8 ± 0.1	1.8
Phe	0.3 ± 0.3	nd

†Mean ± SD (n = 3), ‡Average of results from two experiments, nd: Not detected.

Supplementary Table S4. Amino acid composition of precipitates I and II, and the product unadsorbed on DEAE-Sephacel

	Precipitate I	Precipitate II	Unadsorbed product
Amino acid		mol%	
Asx	14.0[a]	13.2	9.5
Ser	6.9	7.8	9.7
Glx	14.4	14.7	17.0
Gly	4.0	3.8	2.7
His	2.1	2.0	1.3
Arg	1.9	1.9	1.3
Thr	6.4	6.7	12.4
Ala	5.9	6.0	5.6
Pro	4.6	4.9	10.1
Tyr	2.9	2.7	0.9
Val	6.1	6.1	7.7
Lys	9.7	9.4	6.5
Ile	6.1	6.0	7.7
Leu	12.1	11.9	5.8
Phe	3.1	3.0	1.8

[a] Average of results from two experiments which was carried out with SWPP sample No.1.

Supplementary Figure S1. Size exclusion HPLC on Superdex-75. Chromatograms A, B and C show elution patterns of GMP fractions from SWPP samples No. 1, No. 2 and No. 3, respectively, and the chromatogram D shows the elution pattern of reference GMP. Chromatogram E gives elution patterns of molecular weight markers including: (1) bovine serum albumin (67 kDa); (2) dimeric β-lactoglobulin (36.6 kDa); (3) α-lactalbumin (14.2 kDa); and (4) vitamin B_{12} (1. 355 kDa).