Electronic Supplementary Material (ESI) for Food & Function.

Table S1. Molecular weight distribution of silver carp skin collagen peptides[a]

Samples	Molecular weight distribution（%）				
	>5000 Da	3000-5000 Da	1000-3000 Da	500-1000 Da	<500 Da
HCP	16.69	18.96	42.60	17.33	4.42
MCP	16.13	15.93	43.18	19.77	4.99
LCP	11.12	12.53	61.52	11.53	3.30

[a] Following the scheme of Figure.1, the HCP, MCP and LCP were dialysis with an ultrafiltration membrane of 200 Da to remove free amino acids and salt and then filtered through 0.22 μm nylon filters and separated via RP-HPLC (Agilent 1100, USA; TSK gel G2000 SWXL column) to obtain chromatograms. A molecular weight calibration curve was prepared from the average retention times of the following standards: aprotinin (6512 Da), bactutracin (1423 Da), WPWW (tetrapeptide, 674 Da), NCS (tripeptide, 322 Da), Gly-Ser (dipeptide, 146 Da) (Sigma, USA).

Table S2. Sequence, molecular weight and purity of collagen peptides and amino acids[a].

Name	Sequence or amino acid composition	Molecular weight (Da)	Purity or grade
AO	Ala-Hyp	202.21	98%
IO	Ile-Hyp	244.29	98%
PO	Pro-Hyp	228.25	99%
GPO	Gly-Pro-Hyp	285.30	98%
OG	Hyp-Gly	188.18	98%
POG	Pro-Hyp-Gly	285.30	98%
AOG	Ala-Hyp-Gly	259.29	98%
SOG	Ser-Hyp-Gly	275.26	98%
P	Pro	115.13	Cell culture grade
O	Hyp	131.13	Cell culture grade
AA	Gly: Pro: Hyp: Ala = 3:1:1:1	560.56	Cell culture grade

AA, mixture of amino acid Gly, Pro, Hyp and Ala at ratio of 3:1:1:1.

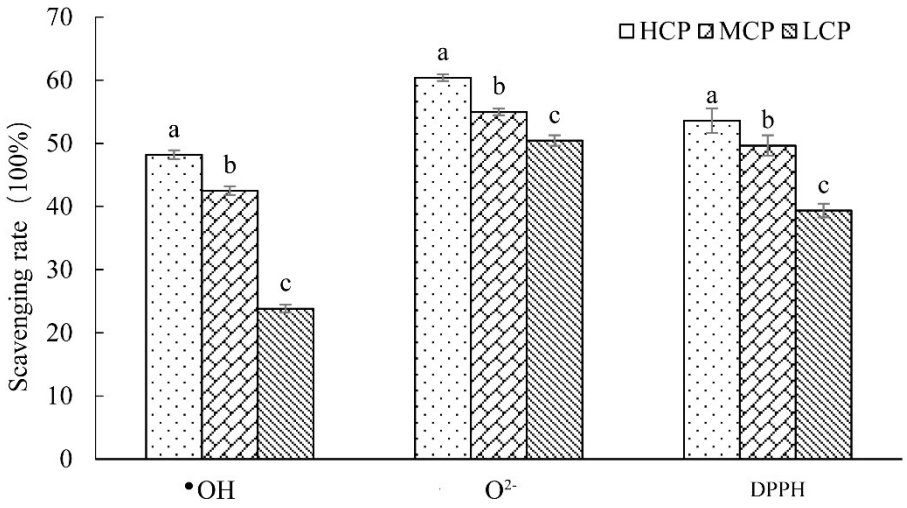

Figure S1. Antioxidant activities of silver carp skin collagen peptides. The collagen peptides were enzymatically digested by three proteases to develop collagen peptides with high, medium and low antioxidant activities (named as HCP, MCP and LCP, respectively). Each data was expressed as mean value ± standard deviation (n = 3). Values bearing different lowercase letters (a, b and c) were significantly different ($p < 0.05$) among HCP, MCP and LCP in O^{2-} , HO• and DPPH radical scavenging activity.

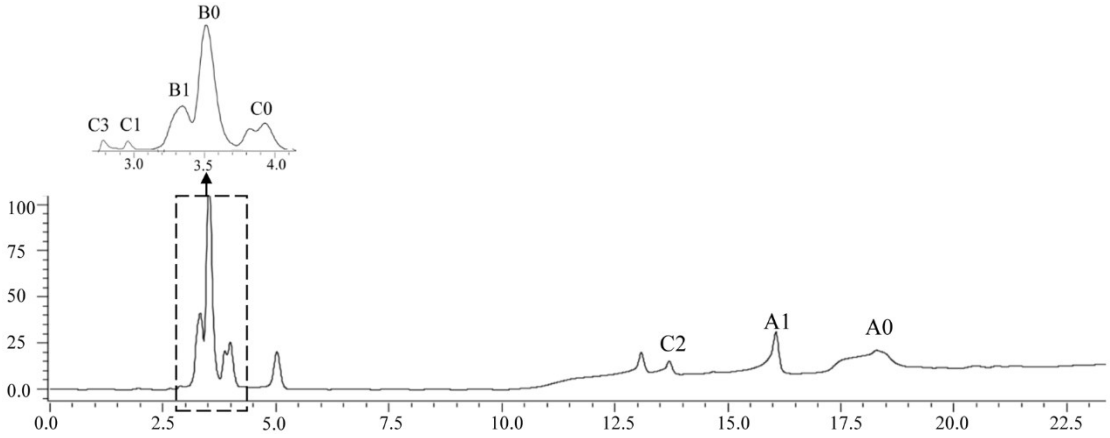

Figure S2. HPLC chromatography of ten Hyp-containing collagen peptides. The peptides were synthesis and dissolved in ultrapure water. All the Hyp-containing peptides were prepared in concentration of 10mM and then mixed isopycnic and adjusted pH value to 7.5. The chromatography was collected under the same program that determined SCP.