

Supplementary material for:

Isolation and identification of an antioxidant collagen peptide from skipjack tuna (*Katsuwonus pelamis*) bone

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Table S1 The degree of hydrolysis, enzymolysis conditions and antioxidant activities of skipjack tuna bone collagen hydrolysates. Results are reported as mean values \pm SD.

Collagen peptide	Protease*	DH (%)	Enzymolysis conditions			DPPH radical
			pH	T(°C)	Reaction Time (h)	scavenging activity IC ₅₀ (mg/mL)
STCH-TC	TC	16.28 \pm 0.074	8.0	40	2	4.211 \pm 0.11 ^a
STCH-T+C	T+C	15.29 \pm 0.074	8.0	40	2+2	5.549 \pm 0.07 ^b
STCH-C+T	C+T	15.35 \pm 0.028	8.0	40	2+2	5.428 \pm 0.29 ^b

* In this work, E:S (E represents enzyme, and S represents substrate) ratio for trypsin and chymotrypsin is 0.5 % (w/w) and 0.1 % (w/w), respectively

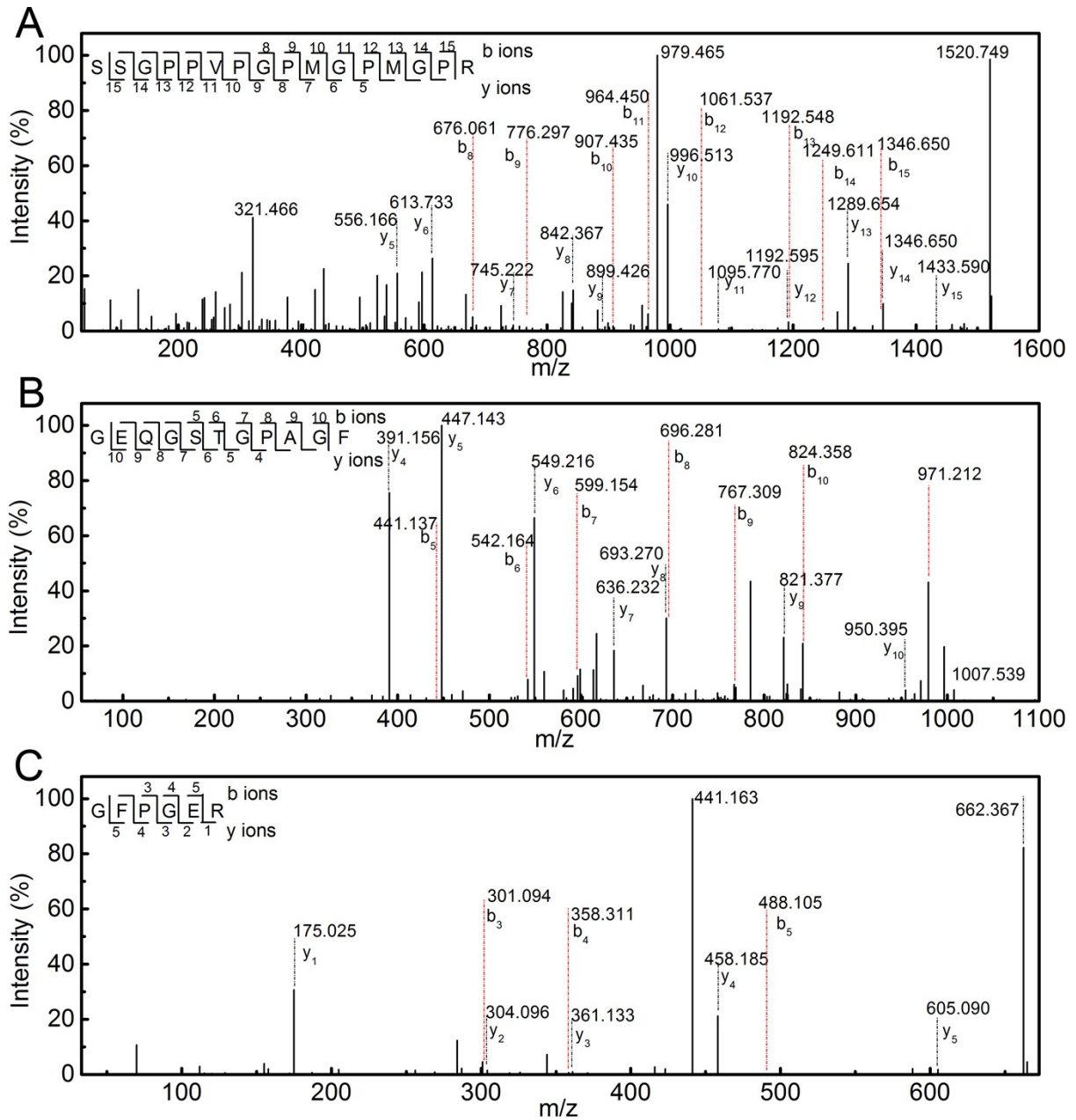


Fig. S1 Identification of the amino acid sequence using MALDI-TOF/TOF mass spectrometry. (A) SSGPPVPMGMGPR; (B) GEQGSTGPAGF; (C) GFPGER.

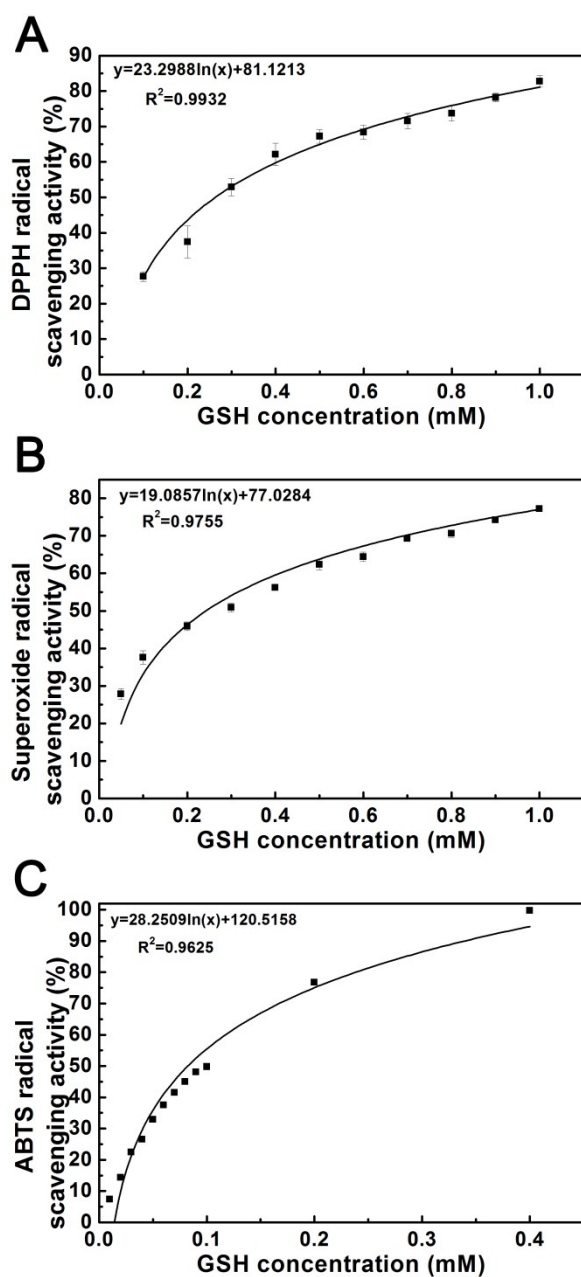


Fig. S2 Antioxidant activities of the GSH. (A) The GSH (0-1.0mM) was used as the standard of DPPH radical; (B) The GSH (0-1.0mM) was used as the standard of superoxide radical; (C) The GSH (0-0.4mM) was used as the standard of ABTS radical.

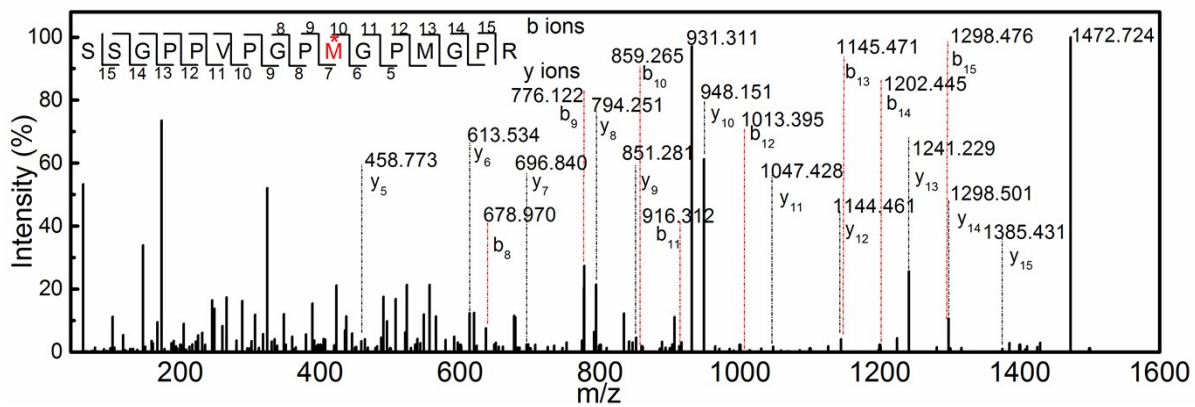


Fig. S3 The MALDI-TOF/TOF mass spectrometry of SSGPPVPGPMGPMGPR after reaction with DPPH radical.

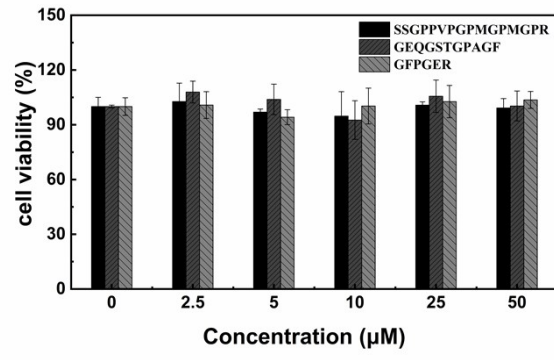


Fig.S4 Effects of the peptides on cytotoxicity in HepG2 cells.

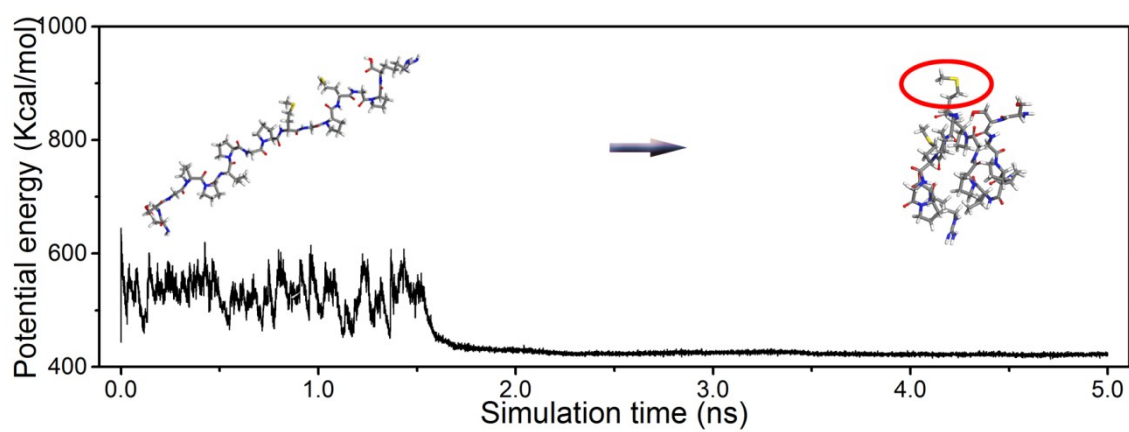


Fig. S5 The time evolution of the potential energy of the system including one peptide of SSGPPVPGPMGPMGPR and one DPPH radical.