

**Table S1 The composition of electrolytes of the simulation digestion *in vitro* and the electrolyte concentration in the final digestion mixture.**

Constituent	Stock conc.	SSF		SGF		SIF		
		pH 7.0		pH 2.5		pH 7.0		
		Vol. of stock	Conc. in SSF	Vol. of stock	Conc. in SGF	Vol. of stock	Conc. in SIF	
	<b>g L<sup>-1</sup></b>	<b>mol L<sup>-1</sup></b>	<b>mL</b>	<b>mmol L<sup>-1</sup></b>	<b>mL</b>	<b>mmol L<sup>-1</sup></b>	<b>mL</b>	<b>mmol L<sup>-1</sup></b>
KCl	37.30	0.50	15.10	15.10	6.90	6.90	6.80	6.80
KH <sub>2</sub> PO <sub>4</sub>	68.00	0.50	3.70	3.70	0.90	0.90	0.80	0.80
NaHCO <sub>3</sub>	84.00	1.00	6.80	13.60	12.50	25.00	42.50	85.00
NaCl	117.00	2.00	/	/	11,80	47.20	9.60	38.40
MgCl <sub>2</sub> (H <sub>2</sub> O) <sub>6</sub>	30.50	0.15	0.50	0.15	0.40	0.10	1.10	0.33
(NH) <sub>2</sub> CO <sub>3</sub>	48.00	0.50	0.06	0.06	0.50	0.50	/	/
CaCl <sub>2</sub> (H <sub>2</sub> O) <sub>2</sub>	44.10	0.30		1.50	0.25	0.15	1.00	0.60
				(0.75*)		(0.075*)		(0.30*)

The volumes are calculated for a final volume of 500 mL for each simulated fluid.

\* in brackets is the corresponding Ca<sup>2+</sup> concentration in the final digestion mixture.

The stock of NaHCO<sub>3</sub> could be stored at 2-5°C for one month after filtering with 0.45 µm membrane.

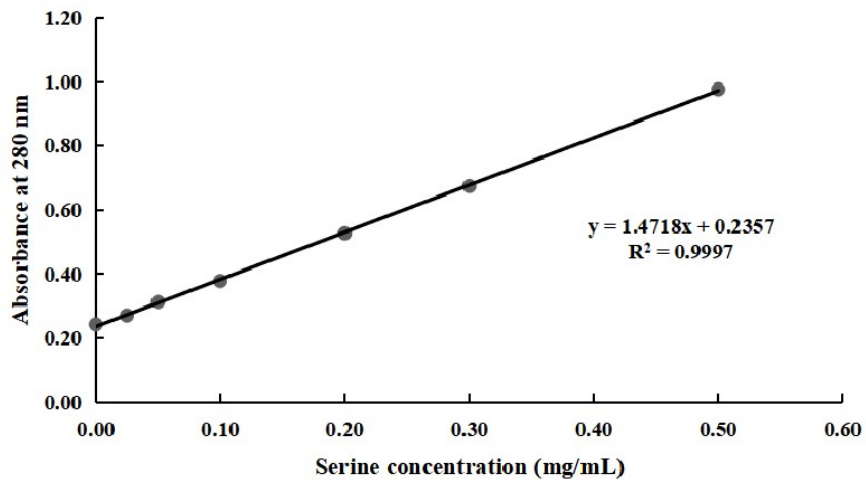
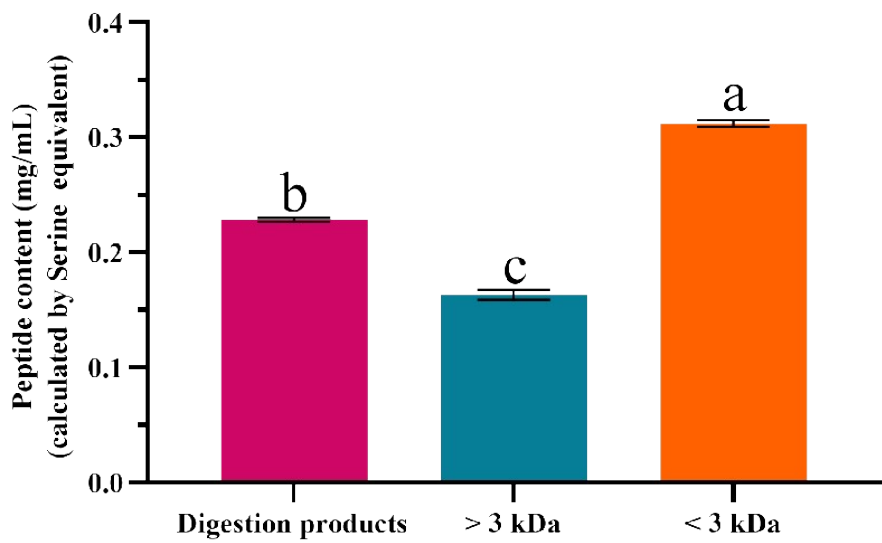


Figure S1 The peptide content in digestion products and fractions after ultrafiltration:  
 XHDP-I and XHDP-II  
 (A) Peptide content (B) Standard curve for Serine

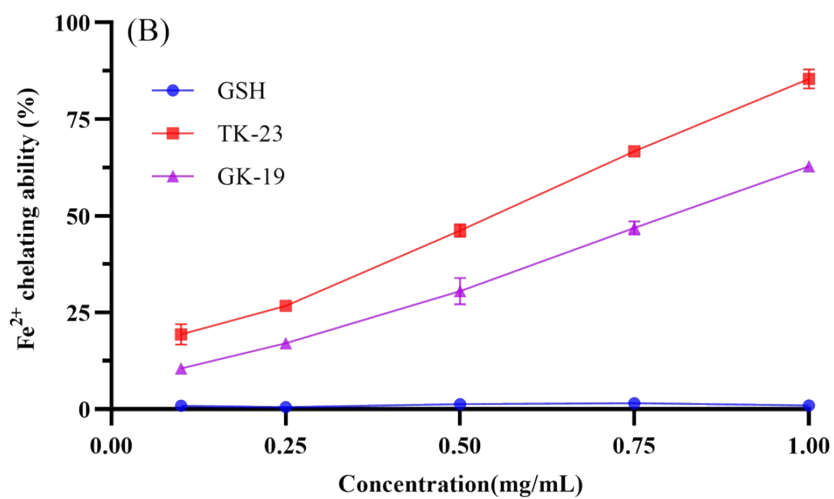
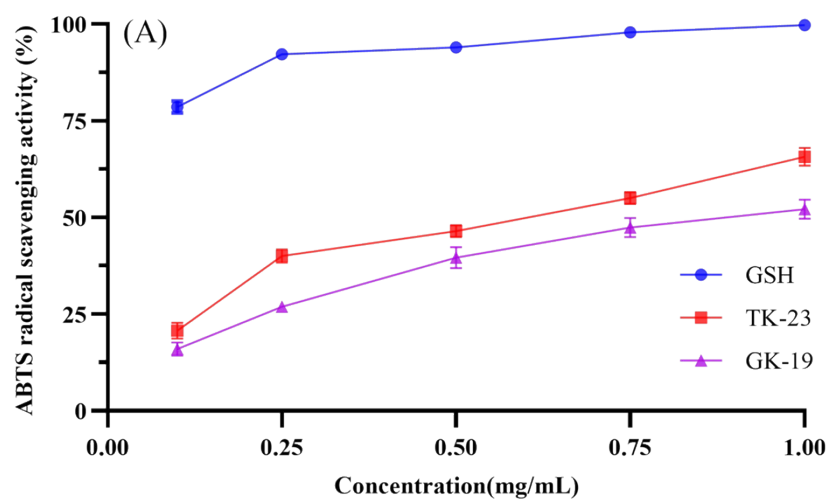


Figure S2 Antioxidant activities of synthesized peptide TK-23 and GK-19  
(A) ABTS radical scavenging activity (B) Fe<sup>2+</sup> chelating ability