Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Material

Table S1. RMSD value between EGFR and native ligand of 1IVO after molecular docking using CDOCKER, LibDock and LigandFit docking algorithm

	CDOCKER			LibDock			LigandFit		
No.	**Pose**	**Reference**	**RMSD value (Å)**	**Pose**	**Reference**	**RMSD value (Å)**	**Pose**	**Reference**	**RMSD value (Å)**
1	1IVO-1	1IVO-1	0.0000	1IVO-1	1IVO-1	0.0000	1IVO-1	1IVO-1	0.0000
2	1IVO-2	1IVO-1	3.2411	1IVO-2	1IVO-1	13.4153	1IVO-2	1IVO-1	1.6592
3	1IVO-3	1IVO-1	1.9480	1IVO-3	1IVO-1	17.4821	1IVO-3	1IVO-1	7.2496
4	1IVO-4	1IVO-1	17.1064				1IVO-4	1IVO-1	9.8477
5	1IVO-5	1IVO-1	7.7512						
6	1IVO-6	1IVO-1	2.9591						
7	1IVO-7	1IVO-1	13.3061						
8	1IVO-8	1IVO-1	22.5397						
9	1IVO-9	1IVO-1	21.1556						
10	1IVO-10	1IVO-1	11.4168						
11	1IVO-11	1IVO-1	15.5136						

Table S2. The Box-Behnken experimental design and the response for the SCP

Run order	Independent variable				Soluble peptides content（mg/mL）	
	Time（h）	Temperature（℃）	E/S（U/g）	pH	Experimental	Predicted
1	3.5	45	6000	7.5	0.3985	0.3895
2	3.5	45	6500	7.0	0.3083	0.3200
3	3.5	50	6000	7.0	0.4879	0.4900
4	3.5	50	6000	7.0	0.4898	0.4900
5	4.5	50	6500	7.0	0.3825	0.3806
6	4.0	50	5500	7.5	0.4351	0.4345
7	3.5	50	6000	7.5	0.4326	0.4260
8	4.5	55	6000	7.0	0.4531	0.4466
9	4.5	50	6000	6.5	0.4263	0.4200
10	4.0	55	6000	7.5	0.4569	0.4575
11	4.0	45	5500	7.0	0.3993	0.3780
12	4.0	50	5500	6.5	0.4737	0.4695
13	4.0	45	6000	6.5	0.3741	0.3665
14	3.5	55	6000	7.0	0.4931	0.4874
15	4.0	55	6000	6.5	0.5034	0.5065
16	3.5	45	6000	7.0	0.3622	0.3614
17	4.0	50	6500	6.5	0.3980	0.3895
18	3.5	50	6000	6.5	0.4725	0.4669
19	3.5	50	5500	7.0	0.4608	0.4574
20	4.5	50	6000	7.5	0.4435	0.4351
21	4.0	50	6000	7.0	0.4995	0.4900
22	4.5	50	5500	7.0	0.4163	0.4166
23	4.0	55	6500	7.0	0.4432	0.4240
24	3.5	50	6500	7.0	0.3815	0.3774
25	4.0	50	6000	7.0	0.5037	0.4900
26	4.0	50	6500	7.5	0.4037	0.3985
27	4.0	50	6000	7.0	0.4913	0.4900
28	4.5	45	6000	7.0	0.3677	0.3646
29	4.0	55	5500	7.0	0.4840	0.4820

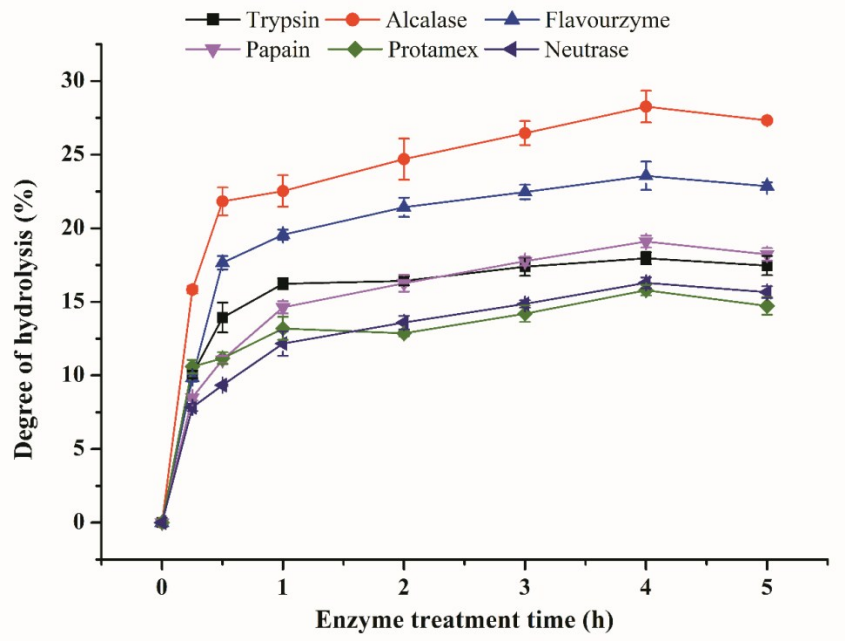

Fig. S1 Degree of hydrolysis of yak bone collagen by the six different enzymes during 5 hours

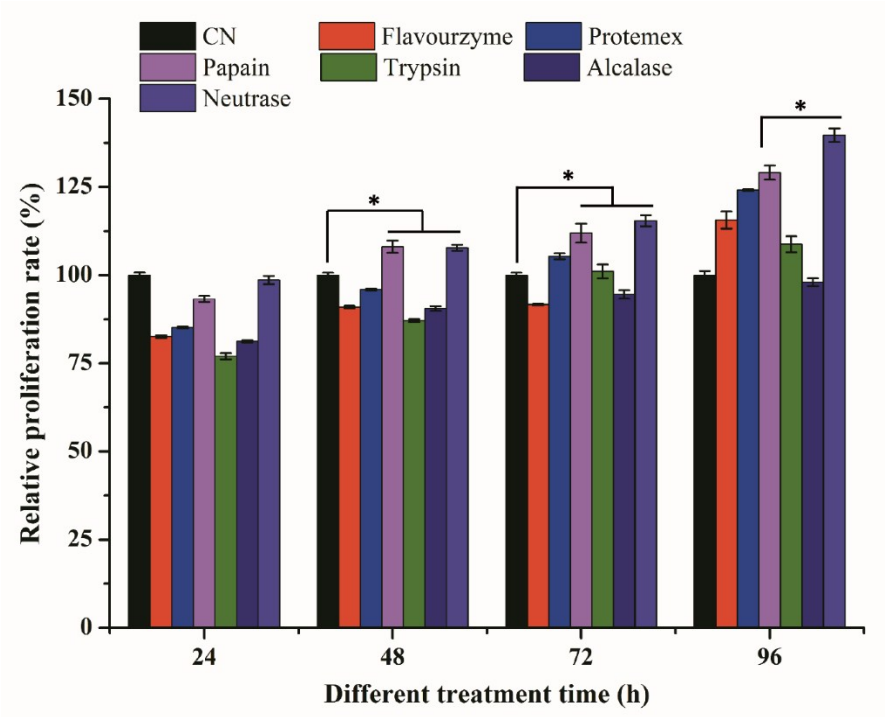

Fig. S2 Comparation the effect of six different enzymes hydrolysates on OPPA (asterisks indicate significant differences compared with control group at $P < 0.05$)

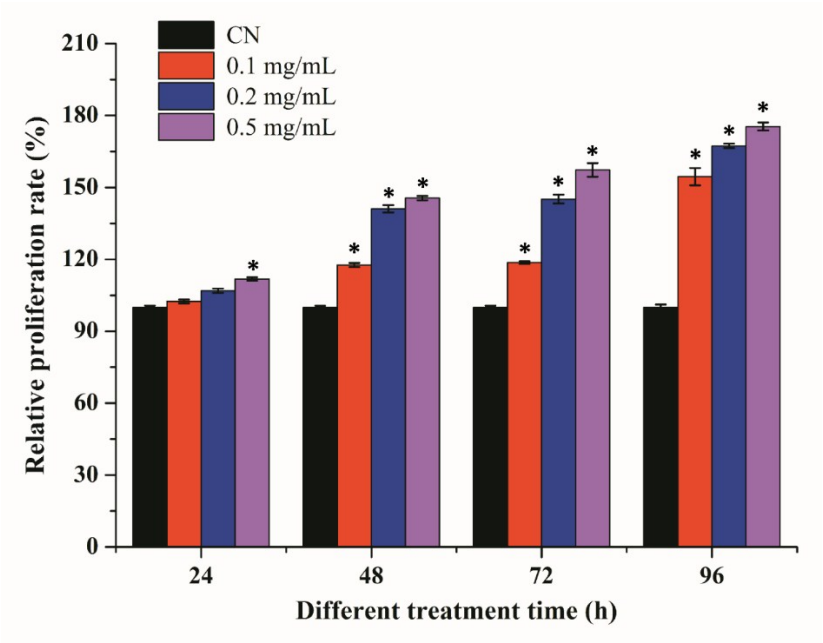

Fig. S3 The OPPA of peptides (0.1, 0.2 and 0.5 mg/mL) at different culture time (asterisks indicate significant differences compared with control group at $P < 0.05$)

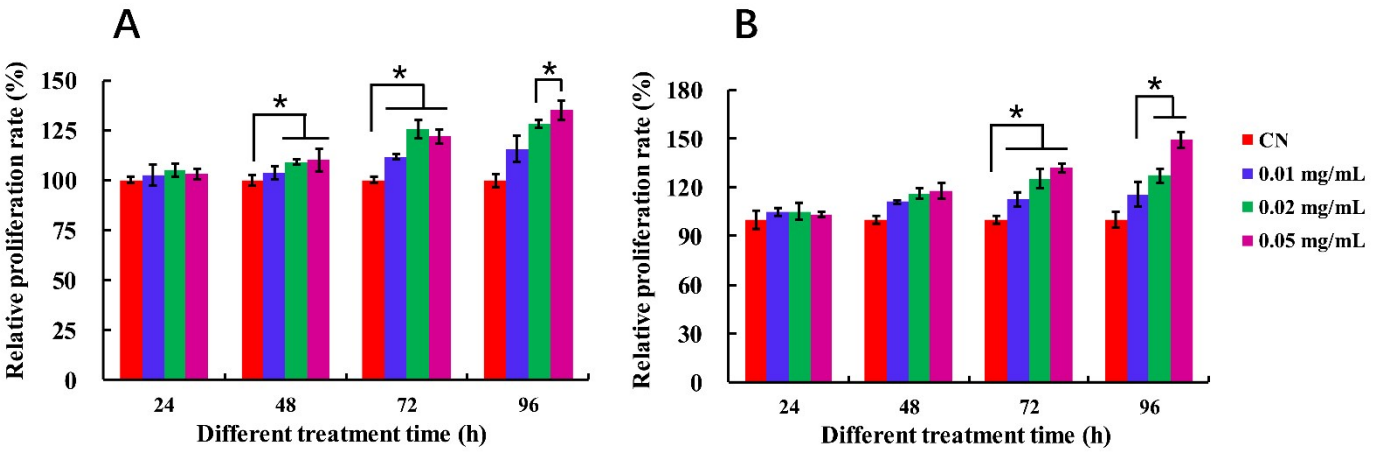

Fig. S4 The OPPA of the synthetic peptides (GP-16 and GD-18) (0.01, 0.02 and 0.05 mg/mL) at different culture time. (A) Synthetic peptide GP-16; (B) Synthetic peptide GD-18 (asterisks indicate significant differences compared with control group at $P < 0.05$)