

1     **Carboxymethylpachymaran entrapped plant-based hollow microcapsules for**  
2                                   **delivery and stabilization of  $\beta$ -galactosidase**

3     Ziyu Deng <sup>a,d</sup>, Yaqiong Pei <sup>1 a,b</sup>, Shishuai Wang <sup>b</sup>, Bin Zhou <sup>c</sup>, Jiwei Li <sup>a</sup>, Xinyao Hou <sup>a</sup>,  
4     Jing Li <sup>a,d</sup>, Bin Li <sup>a,d,e</sup>, Hongshan Liang <sup>a,d\*</sup>

5     <sup>a</sup> College of Food Science and Technology, Huazhong Agricultural University,  
6     Wuhan 430070, China

7     <sup>b</sup> College of Culinary and Food Engineering, Wuhan Business University, Wuhan  
8     430056, China

9     <sup>c</sup> School of Food and Biological Engineering, Hubei University of Technology,  
10    Wuhan 430068, China

11   <sup>d</sup> Key Laboratory of Environment Correlative Dietology (Huazhong Agricultural  
12    University), Ministry of Education, China

13   <sup>e</sup> Functional Food Engineering & Technology Research Center of Hubei Province,  
14    China

15   \*Corresponding author: Hongshan Liang

16   E-mail address: lianghongshan@mail.hzau.edu.cn

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23 **Materials and methods**

24  $\beta$ -Gal (0.1%, w/v) stock solution was obtained by dissolving powder in deionized  
25 water under gentle stirring (300.0 rpm) at room temperature for 30.0 min. CMP (3%,  
26 w/v) stock solution was obtained by dissolving powder in deionized water under  
27 gentle stirring (300.0 rpm) at room temperature for 2.0 h. Sample 1:  $\beta$ -Gal solution  
28 was added into pH 2.0 solution with gentle stirring (500.0 rpm). Sample 2:  $\beta$ -Gal  
29 solution was added into CMP solution with gentle stirring (500.0 rpm) and the  
30 mixtures were continuously stirred for 1.0 h, followed by adjusting the pH value to  
31 pH 2.0. Sample 3:  $\beta$ -Gal solution was added into CMP solution with gentle stirring  
32 (500.0 rpm) and the mixtures were continuously stirred for 1.0 h for well blending.  
33 Then, samples were placed in a vacuum drying oven and a 100 mbar vacuum was  
34 applied for 2 h at 25 °C. The pH 2.0 solution was added into this sample. The final  $\beta$ -  
35 Gal concentration in all the samples was 0.01 mg/mL and  $\beta$ -Gal alone (sample 1) in  
36 pH 2.0 solution was treated as control. Samples were incubated at 37.0 °C for 2.0 h.  
37 After incubating, the samples were measured enzyme activity.

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45 **Figure captions:**

46 **Fig.S1.** The effect of different processing on the stability of  $\beta$ -Gal after incubation for

47 2 h at pH=2. Each result represents the mean  $\pm$  SD of three independent experiments.

48 Control:  $\beta$ -Gal alone;  $\beta$ -Gal in CMP solution;  $\beta$ -Gal entrapped in a matrix of CMP.

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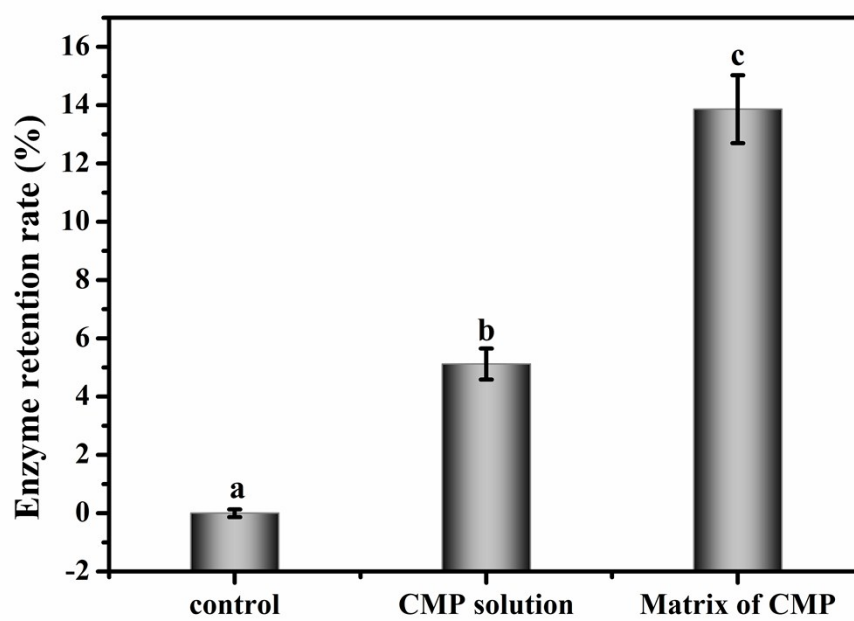
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67 Fig.S1.



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