

Electronic Supporting Information (ESI) for:

**On-chip immunomagnetic separation of allergens from
myofibrillar proteins of seafoods for rapid allergy test**

Li Wang, Hongyan Bi*

College of Food Science and Engineering, Shanghai Ocean University, Hucheng Ring
Road 999, Pudong New District, 201306 Shanghai, China

*, To whom correspondence should be addressed. Tel.: +86-21-61900364; Fax: +86-
21-61900365; E-mail address: hybi@shou.edu.cn

E-mail addresses for the other authors: lwang1210@qq.com

S1. Extraction of myofibrillar protein from shrimp and crab samples

Myofibrillar protein was extracted from shrimp samples with reference to a published report, and slightly modified.¹ Briefly, shrimp samples were thawed at 4 °C, peeled and beheaded. 6 g of the obtained muscle was minced and homogenized with 20 mL of 10 mM PBS (pH 7.4) in a ratio of 1:10 (v/v), followed by centrifuged at 12,000 g for 10 min at 4 °C. The precipitate was resuspended in 10 mM PBS (pH 7.4) and serially centrifuged (12,000 g for 10 min at 4°C) four times with PBS buffer (10 mM, pH 7.4). The resultant precipitate was supposed to be the myofibrillar protein, which was collected and resuspended in 0.1 M Tris-HCl buffer (pH 7.5) containing 0.5 M NaCl for further use.

For protein extraction from crab samples, a published report was referred to with some modifications made.² Muscle tissue from the crab claw was taken out, and 5 g of muscle sample was mixed with 25 mL of PBS (0.01 M, pH 7.4), and homogenized for 2 min. Next, centrifugation of sample was carried out at 7,000 g and 4 °C for 30 min. Then, the filtrate was centrifuged at 15,000 g and 4 °C for 15 min, to obtain the supernatant that contains the myofibrillar protein extracts for later use.

References

1. Y. Yang, H. F. Yan, Y. X. Zhang, H. L. Chen, M. J. Cao, M. S. Li, M. L. Zhang, X. R. He and G. M. Liu, *Food Chem*, 2020, **317**, 126422.
2. C. C. Wu, C. H. Lee, Y. C. Tyan, E. S. Huang, W. T. Yu and H. S. Yu, *Food Chem*, 2019, **289**, 413-418.