

Tentative Identification of Key Factors Determining the Hemostatic Efficiency of Diatom Frustule

Lulu Wang,^{a‡} Kehou Pan,^{ae‡} Lin Zhang,^d Chengxu Zhou,^b Yun Li,^a Baohua Zhu,^a

Jichang Han^{bc*}

- a. Key Laboratory of Mariculture, Ocean University of China, Ministry of Education, Qingdao 266003, China
- b. College of Food and Pharmaceutical Sciences, Ningbo University, Ningbo 315211, China
- c. College of Marine Life Science, Ocean University of China, Qingdao 266003, China
- d. School of Marine Sciences, Ningbo University, Ningbo 315211, China
- e. Function Laboratory for Marine Fisheries Science and Food Production Processes, Qingdao National Laboratory for Marine Science and Technology, Qingdao 266100, China

*Corresponding author: Jichang Han

Corresponding author's address: College of Food and Pharmaceutical Sciences,
Ningbo University, Ningbo 315211, China

Email: Hanjichang_CA@163.com

Tel: +86 0532 82032938

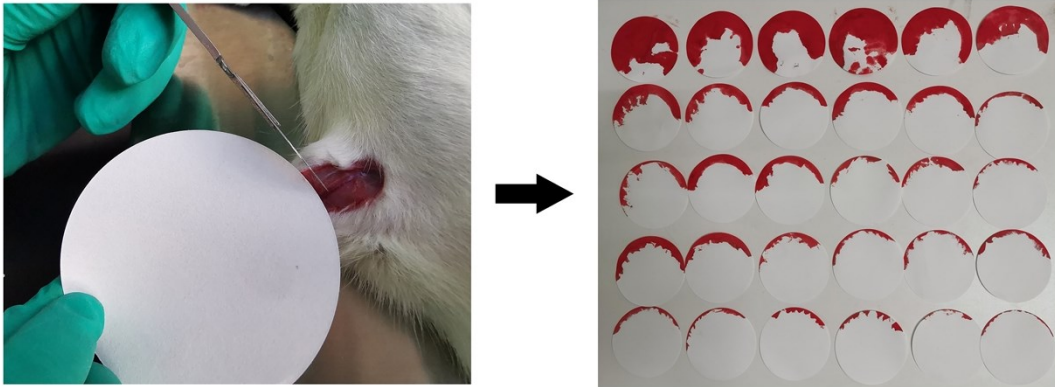


Figure S1. Photographs of rat femoral artery model. Pre-weighted filter paper was placed below the injured site to absorb the blood. The weight of wet filter paper was recorded at the first time to determine the accurate hemostasis time and the amount of bleeding.

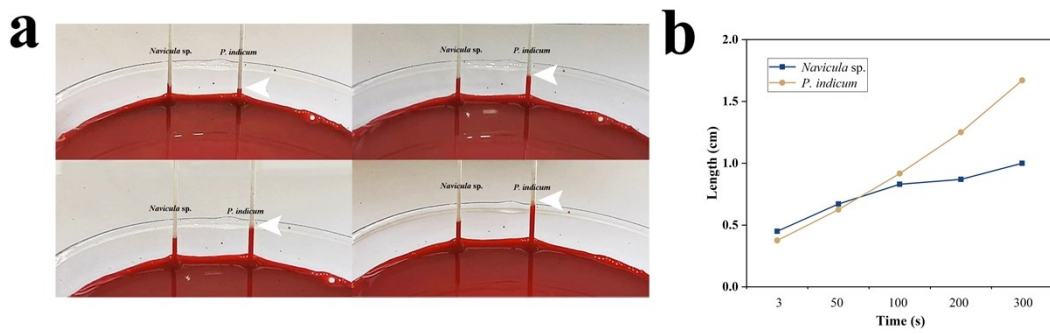


Figure S2. (a) Snapshot images of capillary rise for *Navicula* sp. (left capillary) and *P. indicum* (right capillary). (b) The displacement value for capillary risen blood of *Navicula* sp. and *P. indicum*.

Table S1. Hemostasis time, re-bleeding time, and total amount of bleeding of all groups.

□	No treatment	QuikClot®	<i>C. orthoneoides</i>	<i>N. avium</i>	<i>Navicula</i> sp.	<i>P.indicum</i>
Hemostasis time (s)	>900	540	180	240	210	270
Rebleeding time (s)	—	660	—	480	570	540
						2116.37 ±
Total amount of bleeding out (mg)	3220.43 ± 121.48	2669.8 ± 171.02	1040.17 ± 85.27	1377.1 ± 105.6	1524.6 ± 38.2	101.75

Table S2. Physical characteristics of diatom frustules.

Diatom species	Size (µm)	BET (m ² g ⁻¹)	Average pore diameter (nm)	Total pore volume (cc g ⁻¹)
<i>C. orthoneoides</i>	18-20	191	7.277	0.3475
<i>N. avium</i>	20-22	162.3	7.762	0.5037
<i>Navicula</i> sp.	8-10	121.464	7.25	0.2202
<i>P. indicum</i>	100-120	43.36	11.03	0.1195