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Online Supplementary Material

Supplementary Methods

Preparation of rabbit anti-*C. nobilis* TM polyclonal antibodies

The specific polyclonal antibody was prepared by subcutaneously injecting of the *C. nobilis* TM in an adult female New Zealand white rabbit by immunizing with purified protein at Xiamen University (Xiamen, Fujian, China), the specific polyclonal antibody was similar with the previous study.[1] Determination of the rabbit anti-*C. nobilis* TM polyclonal antibody titer was shown in Figure S1A.

1. T. J. Han, M. Liu, F. Huan, M. S. Li, F. Xia, Y. Y. Chen, G. X. Chen, M. J. Cao and G. M. Liu, Identification and cross-reactivity analysis of sarcoplasmic-calcium-binding protein: a novel allergen in *Crassostrea angulata*, *J. Agr. Food Chem.*, 2020, **68**, 5221-5231.

Table S1. Specific IgE levels and symptoms of the scallop-sensitized individuals

Serum No.	Age (years)	Sex[a]	Scallop specific IgE (kUA/L)[b]	Symptoms
1[c]	10	M	0.1	-[d]
2[c]	28	F	0.3	-[d]
3[c]	53	M	0.1	-[d]
4[c]	5	F	0.2	-[d]
5	15	M	13.6	atopic dermatitis
6	40	F	15.8	allergic purpura
7	58	M	11.4	urticaria
8	25	F	14.6	cough
9	6	M	18.4	anaphylactic rhinitis
10	11	F	11.8	cough
11	25	F	8.4	edema
12	43	M	7.4	edema
13	32	F	5.4	bronchitis
14	12	F	8.7	cough
15	22	F	6.2	urticaria

[a]M, male; F, female. [b]A sera with specific IgE ≥ 0.35 kUA/L is defined as positive. [c]The person was nonallergic individual. [d]Means no symptoms when the experiment.

Table S2. Maillard reaction modification of eleven specific amino acids on seven IgE epitopes.

Modified amino acids on IgE epitopes	Modification
K12	Furfural
R15	Acetaldehyde, Carboxymethyl, Carboxyethyl
K28	Methyl, Methoxy, Furfural
K76	Acetaldehyde
R125	Acetaldehyde, Furfural, Furan, Carboxyethyl, Pyrroline
R127	Acetaldehyde, Furfural, Furan, Carboxyethyl, Pyrroline
K128	Acetaldehyde, Furan, Carboxyethyl, Pyrroline
R133	Furan, Carboxymethyl, Carboxyethyl
R140	Methyl, Carboxymethyl, Carboxyethyl
K146	Acetaldehyde
K189	Acetaldehyde, Carboxymethyl, Carboxyethyl, Pyrroline

Supplementary Figure Legends

Figure S1. Preparation and verification of rabbit anti-*C. nobilis* TM polyclonal antibodies

(A) Determination of the rabbit anti-*C. nobilis* TM polyclonal antibody titer.

Dot blot analysis of the rabbit anti-*C. nobilis* TM polyclonal antibody titers, 1: 100-1: 2×10^5 is the polyclonal antibody dilution.

(B) SDS-PAGE analysis verification of TM. Lane M: protein marker; Lane 1-2, TM, BSA.

(C) Western blot verification of TM. (primary antibody: specific TM-polyclonal antibodies, dilution 1: 1×10^4). Lane M: protein marker; Lane 1-2, TM, BSA.

Figure S1

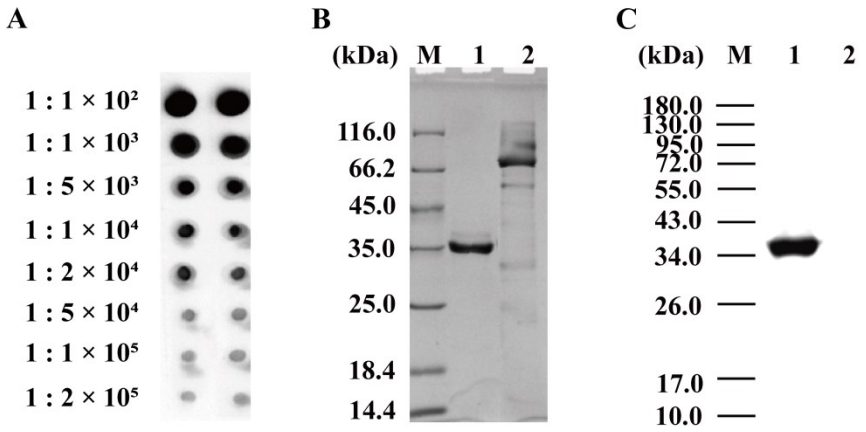

Figure S2. Eighteen individual mimotopes were identified by Phage display random peptide library.

Figure S2