



Effects of Different Salting and Drying Methods on Allergenicity of Purple Mud Crab (*Scylla tranquebarica*)

Al Sailawi. H.A, Rosmilah Misnan¹, Zailatul Hani Mohd Yadzir¹, Noormalin Abdullah², Faizal Bakhtiar², Masita Arip², Mustafa Mudhafar³ and Haidr Msahir Ateshan

Department of Biology, Faculty of Science and Mathematics, Sultan Idris Education University, 35900 Tanjong Malim, Perak, Malaysia

¹Disease Control Division, Ministry of Health Malaysia, 62590 Putrajaya, Malaysia

²Allergy and Immunology Research Centre, Institute for Medical Research, 50588 Jalan Pahang, Kuala Lumpur, Malaysia

³Department of Chemistry, Faculty of Science and Mathematics, Sultan Idris Education University, 35900 Tanjong Malim, Perak Darul Ridzuan, Malaysia

E-mail: hasanali.alsailawi@gmail.com

Abstract: Different salting and drying methods were conducted in this study to determine the impacts on the allergenicity of the purple mud crab, *Scylla tranquebarica*. Crab muscles were treated with the salting and drying methods, and the protein extracts were ready. Sodium dodecyl sulphate-polyacrylamide gel electrophoresis (SDS-PAGE) was used to analyse the extracts to define the profiling of the protein. Immunoblotting tests were conducted by utilizing the sera from 10 to 15 patients who are allergic to crab to detect the allergenic proteins. The outcome showed that the raw crab has 38 proteins fractions ranging from 10 to 245 kDa. In the extracts of dry and wet salted crabs, the majority of the bands disappeared and more prominent bands were noticeable. Meanwhile, in the drying method extracts, the prominent bands were monitored. Five significant allergens at 38, 42, 50, 63, and 73 kDa of the raw crab's immunoblotting were discovered. When comparing the extracts of the raw crab and the treated crab, the treated crabs had fewer allergenic bands. IgE-binding in dried method extracts exhibited to be lesser than the raw and salted crab. Overall, this study had proven that the treated crabs can affect the reaction of the IgE binding at lower capacities. The level of allergenicity is presented as the following treatments; raw > freeze-dried = wet salted > dry salted > sun-dried = oven-dried > microwave-dried. The outcomes of this study may contribute to the development of effective diagnosis and management strategies related to the crab allergy in this nation.

Keywords: Allergy, Crab, Drying, Immunoblotting, Salting, SDS-PAGE