

**ISOLATION OF COLLAGEN FROM THE SCALE AND FIN OF  
THREADFIN BREEM (*Nemipterus japonicus*)**

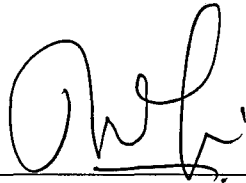
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**Final Year Project Report Submitted In  
Partial Fulfillment of the Requirement For The  
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## APPROVAL SHEET

This Final Year Project entitled “Isolation of Collagen from the Scale and Fin of Threadfin Bream (*Nemipterus japonicus*)” was submitted by Nur-Hani Suryati Maulat Mohamed Zahar, in partial fulfillment of the requirements for the Degree of Bachelor of Sciences (Hons.) Food Science and Technology, Faculty of Applied Sciences, and was approved by

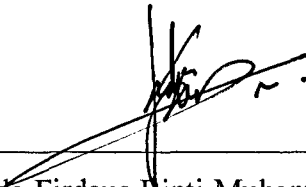


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## ABSTRACT

### ISOLATION OF COLLAGEN FROM THE SCALE AND FIN OF THREADFIN BREAM (*NEMIPTERUS JAPONICUS*)

Collagen was isolated from the scale and fin of threadfin bream using 0.5 M citric acid and calamansi juice (*Citrofortunella microcarpa*) at the duration of 12 and 24 hrs with temperature 4 °C. The collagen physicochemical characteristics were studied and compared with the commercial collagen. The collagen yields were about 6.90 to 22% (on a dry weight basis), depending on the extraction solutions and extraction time (12 hrs and 24 hrs). Calamansi juice treated collagen were light yellow (L = 93.70, a = -1.84, b = 13.44) while collagen produced using 0.5 M citric acid were white (L = 94.82, a = 0.31, b = 0.20). Sensory evaluation on odour recognition study showed that collagen extracted with calamansi juice has potential to be used commercially due to natural pleasant fragrance which is sweet citrus. The SDS PAGE profile showed threadfin bream collagen were type 1 collagens and consisted of two different chains,  $\alpha 1$  and  $\alpha 2$ . Threadfin bream collagen contained higher imino acids (proline and hydroxyproline) level than from commercial collagen. Maximum transition temperature ( $T_m$ ) of the collagen approximately ranged from 24 to 25 °C. Threadfin bream scale and fin collagens were more viscous than commercial collagen. The extraction of threadfin bream collagen at the duration of 12 hrs using calamansi juice generally leads to a reasonably high yield of collagen.