DETECTION ON THE PRESENCE OF GELATIN FROM THREADFIN (*Eleutheronema* sp.) AND TORPEDO SCAD (*Megalaspis* sp.) SKIN

NURNATASAH ROSLAN

Final Year Project Report Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science (Hons.) Biology in the Faculty of Applied Sciences Universiti Teknologi MARA

JULY 2019

This Final Year Project Report entitled **"Detection on the Presence of Gelatin From *Eleutheronema* sp. (Senangin) and *Megalaspis* sp. (Cencaru)"** was submitted by Nurnatasah binti Roslan, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences and was approved by

Dr. Izzati Adilah Bt Azmir
Supervisor
B. Sc. (Hons.) Biology
Faculty of Applied Science
Universiti Teknologi MARA
72000 Kuala Pilah, Negeri Sembilan

Siti Norazura Bt Jamal
Project Coordinator
B. Sc. (Hons.) Biology
Universiti Teknologi MARA
72000 Kuala Pilah
Negeri Sembilan

Dr. Aslizah Binti Mohd Aris
Head School of Biology
Faculty of Applied Science
University Teknologi MARA
72000 Kuala Pilah,
Negeri Sembilan

Date :

TABLE OF CONTENTS

ABSTRACT

DETECTION ON THE PRESENCE OF GELATIN FROM THREADFIN (*Eleutheronema* sp.) AND TORPEDO SCAD (*Megalaspis* sp.) SKIN

The increase extraction of gelatin from marine sources is due to the raise in bovine spongiform encephalopathy (BSE) cases and bird flu (avian influenza) threats, as well as for religious and social reasons. In this study, gelatin was extracted from the skin of *Eleutheronema* sp. (Senangin) and *Megalaspis* sp. (Cencaru) and detection on the presence of gelatin component from the fish skin was through hydrolysation test/gelatinase test, Biuret test and UV absorption spectra analysis. The gelatin from fresh "senangin" and "cencaru" skins have been successfully extracted by acid and alkaline treatment and also hot water extraction method. The extracted materials were further confirmed by gelatinase or hydrolysis test and UV absorption spectra analysis. The gelatin of both fish had the highest absorbance between the wavelength of 210-230nm, which indicated the presence of high non-aromatic amino acids. The hydrolysis test conducted using gelatin broth media showed positive results for both "cencaru" and "senangin" as liquefaction of the broth were observed. Contrastly, the hydrolysis test using gelatin agar showed negative results as no clear zones were observed due to several reasons such as unsuitable temparature for incubation, insensitive agar plate method and the effect of additional mercuric chloride. Also, positive results were shown on both gelatin sources after being tested with Biuret assay as the colour of the reagent changed from blue to purple. Hence, the methods described were useful in analysing and detecting the presence of the extracted gelatin in the skin of "cencaru" and "senangin". However, the duration during freeze drying method need to be lengthen to produce high quality of fish gelatin with small amount of water content.