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## Novel method for gelatin extraction of various local fish using High Pressure Processing (HPP)

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INTERNATIONAL FOOD RESEARCH JOURNAL

Volume: 24 Pages: S533-S539 Supplement: S

Published: DEC 2017

Document Type: Article

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### Abstract

Gelatin from fish skin is known to be an alternative source for mammalian gelatin. However, it has weaker properties compared to bovine and porcine gelatin, which limits its use in the industry. The conventional method for fish gelatin extraction requires long production time and could cause serious water pollution and chemical treatments are often being used to enhance the yield of fish gelatin and its properties but it may affect the amino acid content of the gelatin. In this regard, High-Pressure Processing (HPP) is a novel method suggested for fish gelatin extraction. The HPP method is classified as green technology as it requires low electricity throughout the process. This study will discuss the impact of HPP the technique gelatin extracted from fish skin. Skins from four types of fish, namely red tilapia (*Oreochromis niloticus*), black tilapia (*Oreochromis mossambicus*), grouper (*Epinephelus areolatus*) and threadfin bream (*Nemipterus tambuloides*), were used. High pressure was applied at either pretreatment in citric acid solution or during thermal extraction; and the pressure was maintained at 250 MPa with pressure holding time of 10 minutes and 18 hours of water extraction. Gelatin extract from traditional acid-base method was prepared as a standard for comparison. The study found that there was an increment in the yield of gelatin and the concentration of gelatin extract, and the pre-treatment time was also reduced. (C) All Rights Reserved

### Keywords

**Author Keywords:** Fish gelatin; Green technology; High pressure extraction; Protein hydrolysis; FTIR

**KeyWords Plus:** CHALLENGES; PROTEINS; STORAGE; FOODS

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### Funding

Funding Agency	Grant Number
International Islamic University Malaysia (IIUM)	
International Institute for Halal Research and Training (INHART)	

[View funding text](#)

### Publisher

UNIV PUTRA MALAYSIA PRESS, SERDANG, SELANGOR, 00000, MALAYSIA

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