Document details

Export Download Print E-mail Save to PDF Add to List More...

Full Text View at Publisher

International Journal of Food Properties
Volume 17, Issue 6, 3 July 2014, Pages 1224-1236

Effects of pretreatment on properties of gelatin from perch (Lates Niloticus) skin (Article)

Monsur, H.A.[a], Jaswir, I.[ab], Salleh, H.M.[ab], Alkahtani, H.A.[c]

[a]Department of Biotechnology Engineering, International Islamic University Malaysia, Jalan Gombak, Selangor 53100, Malaysia
[b]International Institute for Halal Research and Training, International Islamic University Malaysia, Jalan Gombak, Kuala Lumpur, Malaysia
[c]College of Food and Agriculture Sciences, Food Science and Nutrition Department, King Saud University, Riyadh, Saudi Arabia

Abstract

View references (36)

Fish gelatins obtained from perch fish skin pretreated with various solutions containing acetic acid, sodium hydroxide (NaOH) and sodium chloride (NaCl) were successfully characterized for their nanostructure pattern using field emission scanning electron microscopy. Each pretreatment transformed collagen to gelatin with fibril, zigzag cracks, straight rods, and cross-linked rods nanostructure patterns. Pretreatment solutions also affect the gel yield, gel strength, amino acid profile, and functional groups in perch gelatin as analyzed by Fourier transform infrared spectroscopy. Samples pretreated with NaCl, NaOH, and acetic acid solution showed the highest gel yield (22.84%) and gel strength (179.84 g). Fourier transform infrared spectra for perch gelatins also revealed weak C-N amide II and III bond stretches as well as weak C=O bond stretch. © 2014 Copyright Taylor & Francis Group, LLC.

Author keywords

Extraction FESEM Gel strength Gelatin Nanostructure

Indexed keywords

Engineering controlled terms: Acetic acid Amino acids Extraction Field emission microscopes Fish Fourier transform infrared spectroscopy Functional groups Nanostructures pH

FESEM
Field emission scanning electron microscopy
Fourier transform infrared spectra
Gel strengths Gelatin
Pre-treatment solutions
Sodium chloride (NaCl)
Sodium hydroxides

Engineering main heading: Sodium chloride

ISSN: 10942912
CODEN: IJFPF
Source Type: Journal
Original language: English

DOI: 10.1080/10942912.2012.685676
Document Type: Article
Publisher: Taylor and Francis Inc.

Metrics View all metrics

5 Citations in Scopus
60th Percentile

0.94 Field-Weighted Citation Impact

PlumX Metrics
Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 5 documents

Physicochemical and Rheological Properties of White-Cheek Shark (Carcharhinus dussumieri) Skin Gelatin
Shahiri Tabarestani, H. , Sedaghat, N. ,
Jahanshahi, M.
(2016) International Journal of Food Properties

Structural Characteristics of Extracted Collagen from Tilapia (Oreochromis mossambicus) Bone: Effects of Ethylenediaminetetraacetic Acid Solution and Hydrochloric Acid Treatment
Liu, H. , Huang, K.
(2016) International Journal of Food Properties

Impact of Ultraviolet Treatment on Improving Gel Strength of Tilapia Skin Gelatin
Wu, C.-K. , Tsai, J.-S. , Sung, W.-C.
(2015) International Journal of Food Properties

View all 5 citing documents

Inform me when this document is cited in Scopus:
Set citation alert Set citation feed

Related documents

Nano-structural analysis of fish collagen extracts for new process development
Jaswir, I. , Monsur, H.A. , Salleh, H.M.
(2011) African Journal of Biotechnology