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## Extraction and characterization of gelatin from camel skin (potential halal gelatin) and production of gelatin nanoparticles (Article) (Open Access)

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### Abstract

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Gelatin is used as an ingredient in both food and non-food industries as a gelling agent, stabilizer, thickener, emulsifier, and film former. Porcine skins, bovine hides, and cattle bones are the most common sources of gelatin. However, mammalian gelatins are rejected by some consumers due to social, cultural, religious, or health-related concerns. In the present study, gelatin was obtained from camel skin as an alternative source using a combination of processing steps. Central composite design combined with response surface methodology was used to achieve high gelatin yields under different extraction conditions: temperatures of 40, 60, and 80 °C; pH values of 1, 4, and 7; and extraction times of 0.5, 2.0, and 3.5 min. Maximum gelatin yield from camel skin (29.1%) was achieved at 71.87 °C and pH 5.26 after 2.58 min. The extracted gelatin samples were characterized for amino acid profile, foaming capacity, film formation, foam stability, and gel strength (Bloom value). Gelatin nanoparticles were produced, and their morphology and zeta potential were determined. Bloom value of the camel skin gelatin was 340 g. Amino acid analysis revealed that the extracted gelatin showed high glycine and proline contents. Analysis of camel skin gelatin nanoparticle and functional properties revealed high suitability for food and non-food applications, with potential use in the growing global halal food market. © 2020 The Authors

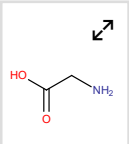
### SciVal Topic Prominence

Topic: Imino Acids | Gelatins | Gelatinization Temperature

Prominence percentile: 92.216

### Chemistry database information

#### Substances




### Author keywords

Bloom value | Camel skin | Characterization | Extraction | Gelatin | Halal | Optimization

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