SciTechnol
International Publisher of Science, Technology and Medicine

Journal of Chromatography Research

Hydroxyproline determination for initial detection of halal-critical food ingredients (gelatin and collagen)

Mohd Hafis Yuswan

Universiti Putra Malaysia, Malaysia

Abstract

Gelatin and collagen are considered halal-critical ingredients as they are typically derived from either bovine or porcine animals. Current analytical methods for determining the sources of gelatin and collagen suffer from limitations in terms of robustness and false positives in peptide matching. Thus, the aim of this study was to investigate the utility of monitoring hydroxyproline, a signature amino acid for gelatin and collagen, for identifying potentially haram foodstuffs. To determine the hydroxyproline profiles among animal- and plant-based samples, one-way univariate analysis of variance followed by pair-wise comparison was used to establish statistical significance. Multivariate chemometric analysis through principal component analysis revealed a discrete distribution pattern among 59 samples due to hydroxyproline variability. Finally, inter- and intra-laboratory comparisons demonstrated the validity and robustness of hydroxyproline determination according to ISO 17025. Thus, this preliminary identification technique will aid the identification of potentially haram foodstuffs.

Biography

Mohd Hafis Yuswan has completed his degree at Universiti Malaysia Sarawak in Bachelor of Science in Resource Biotechnology with Honors. After graduation, he worked as a Research Officer at Agro-Biotechnology Institute, Malaysia for almost four years for the project of 'Mass Micro Propagation of Wild Edible Mushrooms by Proteomics and Metabolomics'. At the same time, he continued his study at Universiti Kebangsaan Malaysia, Malaysia in Master of Science in Biochemistry. Then, he joined a biopharmaceutical company namely Biocon Sdn. Bhd. in, Johor, Malaysia as an Analyst; a company producing insulin. Owing to his passion in research, he furthered his PhD studies on 2016 at Universiti Putra Malaysia (UPM) in Halal Products Science, majoring in mass spectrometry-based shotgun proteomics. He has completed his PhD on 2018. He is currently a Research Officer of Halal Products Research Institute, UPM. He has 8 publications that have been cited over 65 times, and his publication H-index is 2.

Biography

N Rahmad, JR Al-Obaidi, NMN Rashid, NB Zean, MHYM Yusoff, ..., 2014, Biological research 47 (1), 30.

NA Mohd Jamil, N Rahmad, N Mohd Nor Rashid, MHY Mohd Yusoff, ..., 2013, Journal of Mycology.

M Yuswan, JR Al-Obaidi, A Rahayu, S Sahidan, F Shazrul, D Fauzi, 2015, Advances in Bioscience and Biotechnology 6 (04), 320.

MH Yuswan, WM Aizat, AA Lokman, MNM Desa, S Mustafa, NM Junoh, ..., 2018, Food Analytical Methods 11 (12), 3505-3515

12th World Congress on Analytical Chemistry and Instrumentation, Rome | Italy | 19-20 October | 2020

Citation: Mohd Hafis Yuswan, *Hydroxyproline determination for initial detection of halal-critical food ingredients (gelatin and collagen)*, Analytical Chemistry 2020, 12th World Congress on Analytical Chemistry and Instrumentation, Rome, Italy, 19-20 October, 2020, 07