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Differentiation of bovine and porcine gelatin in vitamin C gummy by high performance liquid chromatography using principal component analysis

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Vitamin C gummy is one of the vitamin favoured by Indonesian Children. Gelatin is an important component for the manufacture of vitamin C gummy that serves as a gelling agent. Gelatin can be obtained by hydrolysis of collagen derived from skin, connective tissue and bones of animals from both bovine and porcine. Gelatine from porcine is forbidden for Muslims and Jews. The aim of this study was to differentiate between bovine and porcine gelatine in vitamin C gummy by High Performance Liquid Chromatography (HPLC) combined with PCA. Vitamin C gummy was hydrolyzed by 6 N-hydrochloric acid, then derivatized using 6-amino quinolyl-N-hydroxysuccinimidyl carbamate (AQC) and analyzed by reversed-phase HPLC. The HPLC spectra were analyzed using a chemometric method, principal component analysis (PCA), to classify both of gelatin. The results from PCA, which were subsequently represented by the Cooman's plot showed a clear distinction between gelatin samples of bovine and porcine origins. This qualitative approach could determine the source of gelatin in food and pharmaceutical industries, especially in Vitamin C gummies.

Biography

Zilhadia has completed his PhD from Faculty of Pharmacy Universitas Indonesia. She is a Lecturer in Pharmaceutical Chemistry and the Director of Pharmacy Medicine Laboratory Syarif Hidayatullah State Islamic University since 2012 until now. She had joined the Syarif Hidayatullah State Islamic University in 2006. She has published several papers in reputed journals and has been a presenter in several international conferences.

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