

Gelatin speciation and porcine determination in food/capsules by LC-MS/MS

Sumaia Abdullah Alsadi and Nagm Eldin Suliman

Dubai Central Laboratory, UAE

Gelatin has many applications in the food, pharmaceutical and nutritional industries supported by its excellent properties and functionalities. Gelatin is a mixture of polypeptides obtained by hydrolysis of collagen primarily from bovine and porcine skin and bones. Since gelatin can be derived from different animal species, the source of authentication is necessary for products containing gelatin due to religious (Muslim halal, Jewish kosher) or health reason. The similarity between different gelatins makes it difficult to trace their species origin. We at Dubai Central Laboratory developed and validated a fast, robust and reliable method for differentiation between bovine and porcine gelatin based on detection and identification of marker peptides in digested gelatins. Porcine was extracted from an aliquot of pharmaceutical capsules, marshmallow and other food matrices using simple extraction technique and injected into a Liquid Chromatograph equipped with a Tandem Mass Spectrometry (LC-MS/MS) detector using the Multiple Reaction Monitoring (MRM). The validated method demonstrates acceptable performance and is suitable for the determination of porcine gelatin in pharmaceutical capsules, marshmallow and other food matrices over the concentration range of 0.25% to 100.00%. This will help alleviate ethical concerns of the source of gelatin used in food manufacturing and pharmaceutical capsules used to deliver drugs. The overall impact of the analysis will help to ensure public health and safety, which is one of the strategic plans of Dubai Municipality.

Biography

Sumaia Abdullah Alsadi, Principal food chemistry Analysts working in Dubai Central Laboratory, Food and Environment Department. First started with the pesticide group was as teamwork for almost six years, Gained experience in standards pesticide preparations and worked with the different instruments ex: GC NPD, ECD, MS and MS. In 2016, I have joined the veterinary group work .In 2017 we formed the Halal team in Dubai.