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Quantification of capsaicinoids by reverse phase ultra performance liquid chromatography

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In recent years because of increasing resistance and regulations on the use of antibiotics in animal feed, plant extracts have gained a lot of attention as an effective substitute to antibiotic growth promoters in animal nutrition. Researchers are very much interested in extracts of turmeric, capsicum, cinnamon among others because of their antimicrobial properties as reported in different *in vitro* studies. In order to have a specific effect, is of great importance to know the concentration of the raw materials. The aim of the study was to develop and validate an efficient and effective RP-UPLC method for quantification of different capsaicinoids (Nordihydrocapsaicin-NDHC, Capsaicin-CAP and Dihydrocapsaicin-DHC) from different microencapsulated samples. The ultrasonic extraction method was used for the extraction of these compounds. The reverse-phase UHPLC-MS analysis was carried out using an Acquity UPLC BEH C18 1.7 μ m (2.1x50 mm) column and a mobile phase comprising of water-acetonitrile (57:43, v/v) both acidulated with formic acid 0.1% at a flow rate of 0.4 ml/min. The detection and quantitation of NDHC, CAP and DHC were carried out at 294, 306 and 308 Daltons respectively on the mass detector. The limits of detection (LOD) were 45, 115 and 55ng/ml for NDHC, CAP and DHC, respectively. Detector response was found to be linear from 100 to 2500, 400-4000 and 100 to 3500 ng/ml for NDHC, CAP and DHC respectively. The present method provides an efficient, accurate and highly reproducible method for quantification of different capsaicinoids in different microencapsulated samples and oleoresins.



Figure1: Chromatogram of capsaicin analysis by RP-UPLC-Quad

Biography

Jarintzi Rico has completed her Master at the age of 26 years from CICATA-IPN-Querétaro. She is instrumental methods analyst at Euro-Nutec Premix S A de CV, Queretaro Mexico.

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