



UNIVERSITY OF TETOVA

# INTERNATIONAL CONGRESS ON NATURAL, HEALTH SCIENCES AND TECHNOLOGY

## BOOK OF ABSTRACTS



6<sup>th</sup> International Balkan  
Conference in Sport Sciences

5<sup>th</sup> International Scientific  
Conference of Applied Sciences



4<sup>th</sup> International Scientific Conference  
of the Faculty of Medical Sciences

3<sup>rd</sup> International Conference of  
Natural Sciences and Mathematics



1<sup>st</sup> International Conference of  
Food Technology and Nutrition

15-17 May, Tetova



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# METHOD FOR DETECTION CEPHALOSPORINS RESIDUES IN MILK USING LIQUID CHROMATOGRAPHY COUPLED TANDEM MASS SPECTROMETRY (LC-MS/MS)

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## Abstract

The possible presence of cephalosporin residues in milk is one of the key issues in food safety which arouses great public concern. When these classes of drugs are retained in food stuff, this may result in allergic or toxic reactions, intestinal flora alterations, bacterial resistance and in fermentation inhibition of the dairy industry. Three cephalosporins residues (cephapirin, cefalexin, ceftiofur) in milk are simultaneous determined with a developed and validated modest liquid chromatography-tandem mass spectrometry (LC-MS/MS) method. The method was validated in accordance with the criteria defined in Commission Decision 2002/657/EC. Samples are initially extracted with EDTA-McIlvain buffer and after that solid-phase extraction clean-up with Oasis HLB cartridge was performed. Chromatographic separation was achieved using a C18 column. From the gained results from validation study it can be concluded that the

method was linear with coefficient of correlation ( $R^2$ ) from 0.9812 to 0.9896. Detection capabilities ( $CC\beta$ ) ranged between 10.26 and 18.25  $\mu\text{g/l}$  and decision limits ( $CC\alpha$ ) ranged between 9.15 and 15.22  $\mu\text{g/l}$ . The recovery values ranged from 78.0 to 95.0 % with relative standard deviations (RSDs) no larger than 17.25 %. This validation study provided evidence that the method is suitable to be applied in routine analysis for the detection of cephalosporin residues in milk.

*Keywords:* cephalosporin residues, milk, validation, LC-MS/MS method.