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S61. Mass Spectrometric Quantitation of Serum Cephazolin

Ali Unlu*, Sedat Abusoglu, Abdullah Sivrikaya

Department of Biochemistry, SelcukUniversity Faculty of Medicine, Konya, Turkey

Objectives
Cefazolin, a first generation cephalosporin β-lactam antibiotic, is commonly used for prophylaxis during cesarean delivery, and in treatment of pulmonary infections and many surgical procedures. The aim of this work was to develop a simple, fast and accurate liquid-chromatography-mass spectrometry method for determination of serum cefazolin.

Methods
Mass spectrometric analyses were performed using an Shimadzu LC-20-AD (Kyoto, Japan) coupled with a ABSCIEX API 3200 triple quadrupole mass spectrometer (USA) equipped with an electrospray ion source (ESI) operating in positive mode.

Results
The standard curves for cefazolin was linear within the range of 0.39-200 µg/ml. Total run time was 5 minutes. Chromatographic separation was performed on a C18 column (4.6×50 mm, 5 µm, Phenomenex Luna) with a mobile phase consisting of 1% formic acid in water and MeOH (10:90, V/V) at a flow rate of 0.8 ml/min.

Discussion
Serum cefazolin measurement can be easily performed by LC-MS/MS system to identify the risk of the patients with therapeutic drug monitoring. This method performs this drug analysis with high throughput.

Conclusions
Exact determination of cefazolin provides reliable levels in clinical studies to avoid toxic effects.

Keywords
Antibiotic levels, mass spectrometry, cefazolin, toxicity.

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