

Determination of Penicillin G residues in livers of very young beef calves

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Abstract:

A method developed in our laboratory and used for several years for the analysis of penicillin G (PenG) residues in animal tissues failed when it was used in a recent study to analyze PenG residues in liver tissues of 1-5 week old beef calves. As a result, we modified the method to permit the analyses of PenG residues in these special samples. The modification consisted of using acetonitrile (ACN) instead of water and phosphotungstic acid to extract PenG from liver tissue. The ACN was evaporated to dryness. The resulting residue was dissolved in 30 ml 2% sodium chloride and cleaned up on a t-C₁₈ Sep-Pak cartridge. The retained PenG was eluted with 1 ml 60% ACN/35% Water/5% 0.2M phosphate buffer, derivatized with 1,2,4-triazole/mercuric chloride at 65 °C, and analyzed by HPLC with UV detection at 325 nm. The limit of quantitation for this method is 5 ng/g (ppb).