

Determination of Chloramphenicol by C18 RP-HPLC

Abstract

A method is described for the determination of Chloramphenicol by C18 reversed-phase HPLC with UV detection. The method is straightforward and sensitivity is at the sub-ppm level with the retention time of chloramphenicol being approximately 4 minutes.

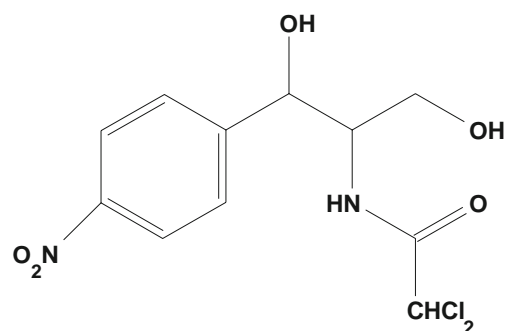
Chloramphenicol (CAP) is a broad spectrum antibiotic which has been widely used for the treatment of the microbial infections in humans between 1950 and 1980.¹ Considerable evidence has now been accumulated detailing its toxic effect on humans.¹ To date, the clinical use of CAP has been reserved as a last resort. Two potentially fatal adverse reactions to CAP treatment are Gray Syndrome, which is dose related, and Aplastic Anaemia, which is not.

A Joint FAO/WHO (Food and Agriculture Organisation/World Health Organisation) Expert Committee on Food Additives has proclaimed that CAP residues in human food supply are unacceptable.² Despite the ban, CAP is still being used to treat food-producing animals for such diseases as mastitis in dairy cattle,³ shipping fever in calves⁴ and other caused by gram-negative bacteria.⁵ As long as CAP products are still available, there exists the potential for their use in food-producing animals. Appropriate methods to monitor meat, milk and eggs for CAP residues will be required.

Microbiological assays could be employed for preliminary screening of antibiotic residues, however they lack the selectivity for specific quantitation. HPLC on the other hand offers high selectivity and sensitivity for CAP quantitation when coupled with the appropriate sample preparation procedures.⁶

Keywords:

Chloramphenicol, CAP, Antibiotic, Veterinary Medicine, Meat, RP-HPLC



Chloramphenicol

Conditions

Column: Spherisorb S5 ODS2, 250 x 4.6 MM ID
 Mobile Phase: Water/Methanol (40:60) (Helium Sparging)
 Flow Rate: 1.0 ml/min
 Temperature: 30°C
 Detection: UV at 280 nm
 Injection Vol: 20 µl
 Standard Prep.: 1.0 mg of chloramphenicol in 10 ml of methanol.

References

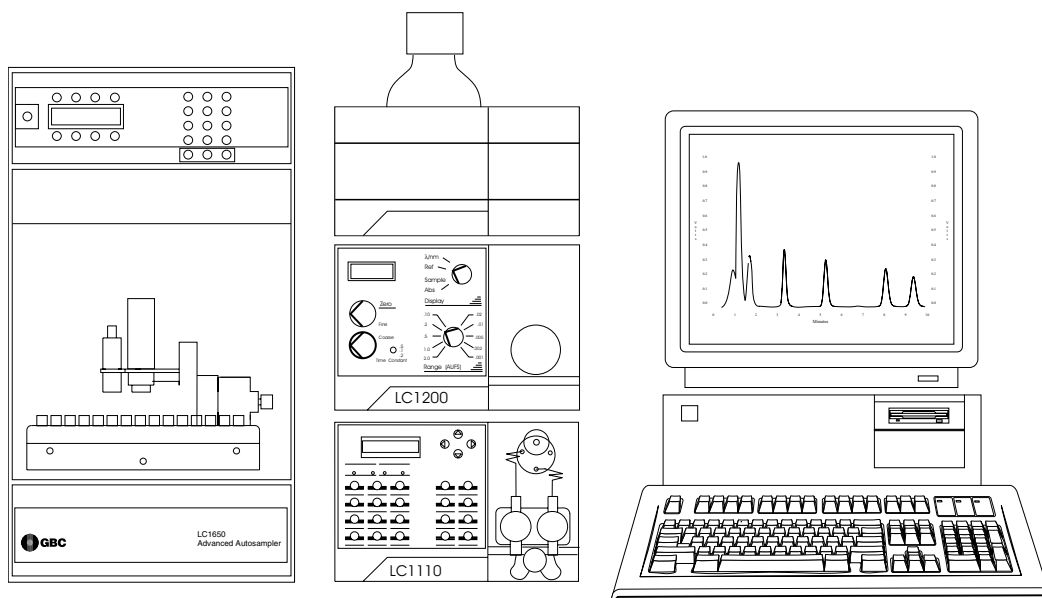
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'...HPLC offers high selectivity and sensitivity for CAP quantitation when coupled with the appropriate sample preparation procedures...'



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