

High Sensitivity Detection of 1pg of Chloramphenicol using the LCMS-8050

Summary

The chloramphenicol transitions were optimized using flow injection analysis (FIA) in ESI negative mode. Isocratic LC conditions were applied to reproducibly detect 1pg on column with at least a signal to noise (S/N) = 7049 and a %CV = 3.21.

Introduction

Chloramphenicol (**Figure 1**) is a broad-spectrum antibiotic. It is no longer a first line agent because of the adverse effect associated with bone marrow toxicity, but developing nations still use this compound today. Because of this, monitoring its presence has been deemed important.

Materials and Methods

FIA was used to optimize all source and instrument conditions. An optimized isocratic LC condition was established empirically and then six injections of 1pg on column all with at least a S/N \geq 7049 with a %CV = 3.21 were obtained. Table 1 shows the results for the repeatability and sensitivity testing of chloramphenicol while Figure 2 shows a representative chromatogram for the analyte.

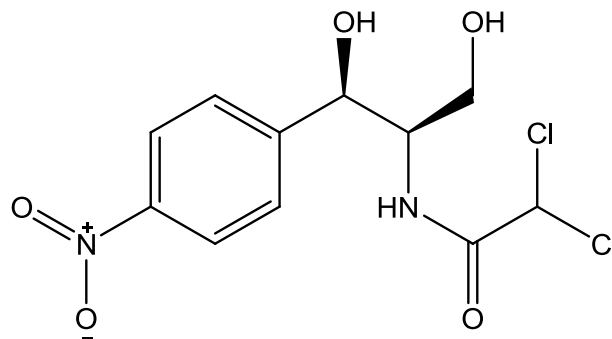


Figure 1. Chemical structure of chloramphenicol.

Peak#	m/z	Ret. Time	Area	S/N
1	321.00>152.10	7.443	6476	7049.56
2	321.00>152.10	9.183	6694	7705.98
3	321.00>152.10	10.926	6965	7499.07
4	321.00>152.10	12.668	7036	7898.11
5	321.00>152.10	14.411	6957	7167.67
6	321.00>152.10	16.15	6680	7807.31

Table 1. Results of the repeatability and sensitivity testing conducted using the Chloramphenicol. S/N \geq 7049, %CV = 3.21, n = 6

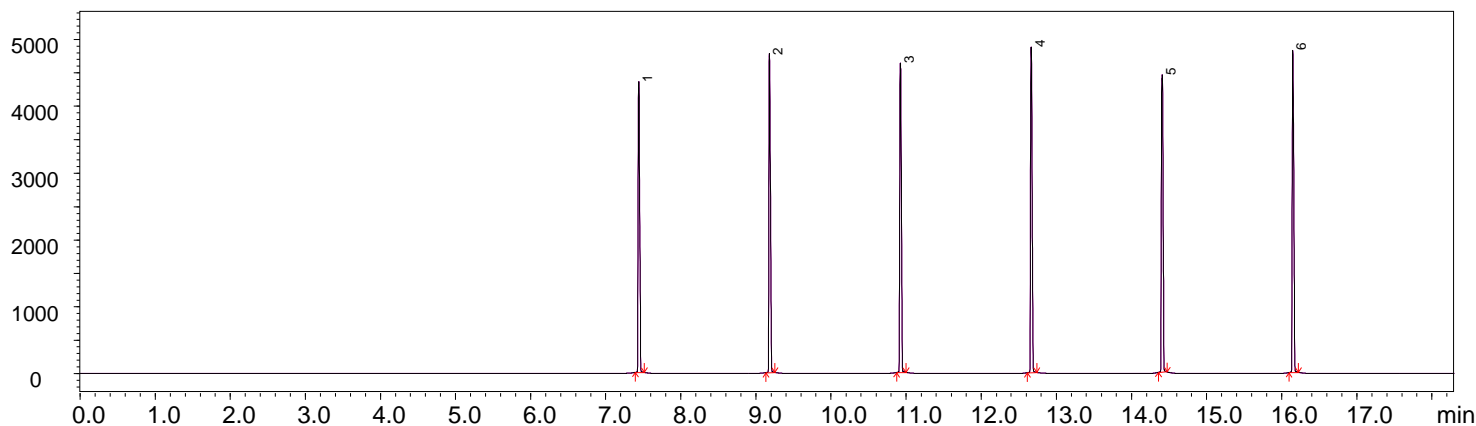


Figure 2. A representative chromatogram of 1pg of chloramphenicol. S/N \geq 7049, %CV = 3.21, n = 6

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