

ABSTRACT**Comparison of TLC Densitometric and Bioautographic Method for Determination of Kanamycin in the Shrimp**

A simple thin-layer chromatographic (TLC) Densitometric method and bioautographic has been established for analysis of kanamycin in the shrimp. The purpose of this study was determining the better method for kanamycin analysis in the shrimp between (TLC) Densitometric method and bioautographic. Kanamycin sulphate was separated from another component matrix on TLC plate using silica gel 60 GF 254 and KH_2PO_4 12% as mobile phase. Retardation factor (R_f) of kanamycin sulphate was obtained 0,425. Resolution factor (R_s) between kanamycin sulphate and matrix compound was 5,06. The analyte spots were quantified using densitometric method at $\lambda = 405$ nm. *Eschericia coli* ATCC 25922 was used as test bacteria in bioautographic method. By TLC-Densitometric kanamycin sulphate response was to be linear at the range of kanamycin sulphate concentration between 99,6-697,2 ppm; ($r = 0,9969$; $p = 0,01$; $V_{xo} = 5,23\%$). By bioautographic kanamycin sulphate response was to be linear at the range of kanamycin sulphate concentration between 199,2-697,2 ppm ($r = 0,9948$; $p = 0,003$; $V_{xo} = 0,88\%$). The result showed that the detection limit of kanamycin sulphate by TLC-Densitometric was 9,4 ppm and quantitation limit was 31,4 ppm using 2 μl capillary pipette. By bioautographic, the detection limit of kanamycin sulphate was 39,84 ppm and quantitation limit was 132,7 ppm using 12 μl capillary pipette. Average recovery obtained by TLC-Densitometric and bioautographic were respectively 46,68% and 43,66%. Precision obtained using TLC-Densitometric and bioautographic were respectively 9,13% and 4,86%. Thus we can conclude that based selectivity, detection limit, limit of quantitation and linearity of TLC-densitometric and bioautographic method were fulfill requirements validation parameters. However, accuracy and precision of both methods were not fulfill validation requirements. So the researcher suggest to modify sample preparation methods to obtain better accuracy and precision. This research also concluded that TLC-Densitometric method more sensitive than bioautographic for determination kanamycin sulphate in the shrimp.

Keywords : Validation, TLC-Densitometric, Bioautographic, Kanamycin, Shrimp