

ABSTRACT**Comparison of Bioautography and TLC-Densitometry Method for Determination of Chloramphenicol in Shrimps**

Bioautography and Thin layer Chromatography (TLC)-Densitometry has been used for the identification and quantification of chloramphenicol. Validation both of the methods has been developed for limit of detection and limit of quantification, accuracy (recovery) and precision (CV) as a purpose to verify that the parameters is appropriate with literature. Thin Layer Chromatography of chloramphenicol has been carried out by using silica gel GF₂₅₄, chloroform : methanol (80 : 20, v/v) as mobile phase. Retardation factor (Rf) of chloramphenicol was 0,56. *Escherichia coli* ATCC 25922 was used as a bacterial test. The analyte spots were seen under UV light in 254 nm and quantified by using densitometry method at wavelength 280 nm. Limit of detection value was 72,59 ppm for bioautography which is determined by its minimum inhibitory concentration (MIC) and 2,32 ppm for densitometry. Limit of quantitation value was 7,70 ppm for densitometry. The response was found to be linear at the amount of chloramphenicol between 103,7 ppm – 518,5 ppm. Chloramphenicol's regression equation line was $y = 0,2314x + 1,134$, r value = 0,9795 and $V_{x0} = 12,55$ % for bioautography, $y = 10729,6930x + 3259,999$, r value = 0,9993 and $V_{x0} = 2,30$ %. Recovery and CV were $(96,55 \pm 3,25)\%$ and 3,37% for bioautography and $(100,21 \pm 2,11)\%$ with CV = 2,11 for densitometry. Conclusion, all of the validation parameters were appropriate with literature and there's no meaning difference between both of them for determining chloramphenicol in shrimp for accuration parameter. TLC-Densitometry is recommended for screening and quantification of shrimps residue because of the sensitivity and more practically procedure than bioautography. Bioautography is recommended to detect potentions of chloramphenicol as antibiotic, which is known from its inhibition zones.

Keyword : validation, chloramphenicol, bioautography, TLC-Densitometry, shrimps.