

DEVELOPMENT OF TLC-METHOD FOR QUANTIFICATION OF PIPERINE IN
TRADITIONAL MEDICINE PREPARATIONS USED IN BHUTAN

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Abstract

Piper nigrum (black pepper) and *Piper mullesua* are the ingredients of many traditional medicine preparations of Bhutan. Piperine is the active chemical constituents presented in *Piper*. Methanolic extraction of the selected preparation was chromatographed on pre-coated silica gel 60F₂₅₄ TLC plates with dichloromethane-ethyl acetate (9 : 1) as mobile phase. Quantity of piperine at R_f value 0.38 was determined by TLC-densitometric and TLC-image analysis methods. TLC-densitometric method was performed on absorption mode at 330 nm. TLC-image analysis was the operation of an image of TLC chromatogram that was taken under 254 nm by using Scion Image software. Calibration curve of both methods showed good linearity relationship with R²= 0.9927 and 0.9962 in the range of 23.87-83.55 ng/spot and 0.34-1.03 µg/spot, respectively. Limit of detection (LOD) and limit of quantitation (LOQ) was 0.35 and 1.05 ng/spot for densitometric method and 15.36 and 46.54 ng/spot for image analysis.

Precision, accuracy and recovery of the both methods were accepted. Their analysis results also not different.

Keywords: Traditional medicine preparations/piperine/TLC-densitomter/TLC-image analysis/Bhutan