SHORT COMMUNICATIONS

DEVELOPMENT OF AN ACCURATE UV SPECTROSCOPIC METHOD FOR TINIDAZOLE IN VAGINAL BUFFERS

ABSTRACT

A precise UV spectroscopic method was developed for accurately quantifying tinidazole (TNZ) using the Shimadzu 1900i UV spectrophotometer. Different sample solutions containing TNZ were scanned across a range of concentration 6 µg mL^{-1} to 26 µg mL^{-1} between 200-400 nm, generating overlay TNZ spectra showing an absorption maximum at 318nm in vaginal buffer which is made up of phosphate buffer (PB) 4.2 pH with 2% Tween 80® LR and 4 mL of methanol. The construction of a six-point calibration curve demonstrated the linearity of TNZ within the 6-26 µg mL^{-1} concentration range. The regression equation derived from this calibration curve was subsequently employed to accurately determine the concentration in accuracy studies. In the analysis of bulk TNZ, a recovery rate ranging from 98.41% to 102.28% was achieved. The analysis results were validated following ICH (International Council on Harmcnization) guidelines and compiled with the required criteria and standards.