

VALIDATION OF ANALYSIS METHOD TO QUANTIFICATION CAFFEINE IN THE NANOPARTICLE FORMULATION USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY UV METHODS

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ABSTRACT

Caffeine is a chemical substance which affects in the growth of hair. To optimize the caffeine activity as the hair grower, an innovation is made by creating the nanoparticle forms of caffeine. This study aims to perform the validation of method in analyzing caffeine levels on the nanoparticle forms using HPLC UV detector method. Validation of methods that is used to analyze caffeine the caffeine levels on the nanoparticle forms is the HPLC method, in the stationary phase of coloumn C18, the mobile phase of phosphate buffer:acetonitrile(90:10), with flow rate of 1,2 mL/minute, and the detector with wavelength of 272 nm. The test parameters done in this study are liniearity test, selectivity test, accuration test and also precision test. The results of this study show that the method used by the writer have ideal selectivity; the linearity is also ideal which indicates the $r = 0,9997$; the ideal precision with its RSD values of = 0,37% and 0,205% ; and the accuration shows the ideal recovery value % ranging from 80-115% is 90,3-94,7%, the LoD value of 2,51 ppm, and LoQ value of 7,62 ppm. In conclusion, the method in this study is consider valid due to the value parameter validations done in this study suits the value set by AOAC.

Keywords : Validation of analysis method, caffeine, nanoparticle, HPLC.