ABSTRACT

METHOD VALIDATION OF VISIBLE SPECTROPHOTOMETRIC FOR ASSAY OF CHONDROITIN SULFATE IN DIETARY SUPPLEMENT CAPLETS

Milamardia

The aim of this study was to obtain a valid visible spectrophotometric method for determination of chondroitin sulfate in dietary supplement caplets. Chondroitin sulfate was hydrolized by concentrated hydrochloric acid, to produce furfural, which will further react with the resorsinol reagent. Furfural condensation with resorcinol in the iron ion produces a yellow-orange complex. The maximum absorbance of the yellow-orange complex is 474 nm against reagents blank. The linear relationship between chondroitin sulfate concentration and absorbance in the concentrations range of 50 ppm - 100 ppm was $y = 0.0033x - 0.1416$ with the correlation coefficient value ($r$) 0.9991 and $\text{Vxo} 1.36\%$. Accuracy of the method was calculated as % recovery. Percent recovery in the concentrations of 80%, 100%, and 120% was 100.29%; Whereas the precision calculated as RSD was 6.94 %.

Keywords: chondroitin sulfate, spectrophotometric, method validation, dietary supplement