

ABSTRACT

METHOD VALIDATION OF THIN LAYER CHROMATOGRAPHY-DENSITOMETRY FOR SIMULTANEOUS DETERMINATION OF GLUCOSAMINE HCl, L-ARGININE HCl AND GLYCINE IN DIETARY SUPPLEMENT

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Validation of thin layer chromatography-densitometry for simultaneous determination of glucosamine HCl, L-arginine HCl and glycine in dietary supplement has been done. The aim of the present study was to obtain a valid thin layer chromatography-densitometry for simultaneous determination of glucosamine HCl, L-arginine HCl and glycine in dietary supplement. The selective separation of glucosamine HCl, L-arginine HCl and glycine was obtained using a mixture of 1-butanol: glacial acetic acid: water (3:1:1) as mobile phase with ninhydrin as visualization reagent. The resolution (R_s) between glucosamine HCl and glycine was 1.3 and R_s between glycine and L-Arginine HCl was 4.6. A good linearity was achieved with the correlation coefficient (r) for each compounds were higher than 0.99 with the relative process standard deviation value (V_{xo}) was not more than 5%. Recoveries of glucosamine HCl, L-arginine HCl and glycine were $99.97\% \pm 1.60$; $100.30\% \pm 1.51$ and $99.90\% \pm 1.39$, respectively. The relative standard deviation (RSD) value was less than 2% for each compounds. The method showed good results and fulfill the validation requirements.

Keywords: glucosamine HCl, L-arginine HCl, glycine, thin layer chromatography-densitometry, method validation, dietary supplement