



UV-Visible Spectrophotometry Method Validation for Analysis of NefopamHCl in Poly-3-Hydroxybutyrate and Poly- ϵ -Caprolactone Microspheres

Neelam Sharma^{1, 2*}, Sandeep Arora¹, Jitender Madan³

¹Chitkara College of Pharmacy, Chandigarh-Patiala National Highway, Patiala, Punjab, India

²Department of Research, Innovation and Consultancy, IKG Punjab Technical University, Jalandhar-Kapurthala Highway, Kapurthala, Punjab, India

³Chandigarh College of Pharmacy, Landran, Kharar, SahibzadaAjit Singh Nagar, Punjab, India

Abstract:UV-visible spectrophotometry analytical method was validated for detection and quantitative analysis of nefopam hydrochloride(NPH) in microspheres synthesized using poly-3-hydroxybutyrate and poly- ϵ -caprolactone. UV absorption maximum (λ_{\max}) of NPH in phosphate buffer (pH 7.4) was found 266 nm. Limit of detection (LOD) and limit of quantification (LOQ) of NPH were found 16.75 and 50.77 $\mu\text{g/ml}$, respectively. Repeatability, intermediate precision and specificity of developed analytical method were established (RSD < 2%). The analytical method was found robust at different wavelengths (± 6) and temperatures (± 20 °C) (RSD < 2%). It was concluded that developed and validated UV spectrophotometry analytical method can be employed for routine quantitative analysis of NPH in microspheres synthesized using poly-3-hydroxybutyrate and poly- ϵ -caprolactone.

Keywords: Nefopam Hydrochloride, Poly-3-Hydroxybutyrate and Poly- ϵ -Caprolactone, Limit of Detection, Limit of Quantification, Intermediate Precision.