

Development Polyvinyl Pyrrolidone Nanoparticle Carrier Based With Curcumin As an Active Ingredients

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ABSTRACT

In this recent years, it developed new method in drug delivery system which is being made to improve the solubility and bioavailability of active pharmaceutical compounds that poorly soluble in water. One of these methods is reducing the particle size down to nanometer or submicron range. The following development of nanoparticle drug delivery systems were performed using polyvinyl pyrrolidone polymer with the active substance curcumin through bottom-up technology using polymer dispersion technique. This study aims to determine the nanoparticle formulation system using curcumin as an active substance, PVP as a carrier, PVA as a surfactant and to determine the particle size characterization using PSA (Particle Size Analyzer). These results indicate that the best manufacture of nanoparticles polymeric carrier systems PVP with active substance curcumin found in formula VI by using the ratio of PVP polymer with the active substance curcumin at 1:18 and characterization of the results using the PSA (Particle Size Analyzer) was obtained for particle size 267.8 ± 73 nanometer. Percent entrapment efficiency of this system is equal to 98.34%. It means that the polymer PVP can be used as a nanocarrier of curcumin with the very good trapping ability.

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