

ABSTRACT

Development of Curcumin Micelles Powder:

Physical Characterization and Its Formulation in Sublingual Tablet.

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Introduction : The present study aims to design a formulation of curcumin micelles with casein polymers. Micelles in liquid form have a weakness in storage, then micelles powder is made by spray dry method with the addition of sucrose. Then powder products were observed for physical characteristics, stability studies with pH and temperature parameters and its formulations in sublingual tablets.

Methods: Curcumin micelles are made by the stirring method for 5 hours at a speed of 850 rpm and the addition of curcumin solution is dropwise. Then the curcumin micelles solution is dried using the spray dry method. The curcumin micelles powder were characterized including visual, morphological, thermal, crystallinity and particle size. Study stability of powder curcumin micelles with pH and temperature parameters. Powder micelles curcumin formulated to be sublingual tablets. Evaluation of sublingual tablet covers hardness test, tablet fragility test, disintegration time test and dissolution test.

Result : The curcumin micelle system can be formed as evidenced by the results of SEM, DTA and XRD. The effect of casein on micellar powder characterization was not observed while the effect of sucrose on morphology was to give a more spherical particle shape, larger particle size, faster tablet disintegration and higher dissolution rate than formulas which did not contain sucrose. The results of the stability study show that curcumin degrades faster at pH 9 and the higher the temperature the degradation rate will increase. The dissolution test results showed that in the 30th minute all the formulas were dissolved by more than 50%.

Conclusion : The developed curcumin micelles powder using polymers casein and protectant sucrose showed potential for sublingual tablet.

Keywords: Curcumin, casein, micelles, protectant, spray dry, sucrose