

# Pengembangan Formula Tablet Kunyah Dispersi Padat Kurkumin-Polivinilpirolidon dengan Pemanis Ekstrak Stevia = Development of Chewable Tablet Formula Curcumin-Polyvinylpyrrolidone Solid Dispersion with Stevia extract as Sweetener

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## Abstrak

Kurkumin merupakan senyawa fenolik terbukti memiliki berbagai efek farmakologi, akan tetapi jarang diformulasikan dalam sediaan oral karena memiliki kelarutan yang rendah dalam air. Untuk meningkatkan kecepatan kelarutan kurkumin dalam air, kurkumin diformulasikan menjadi dispersi padat. Penelitian ini bertujuan untuk mendapatkan tablet kunyah dispersi padat kurkumin-polivinilpirolidon dengan pemanis ekstrak stevia. Dispersi padat kurkumin dibuat menggunakan polivinilpirolidon K-30 dengan perbandingan 1:10. Dispersi padat kurkumin yang diperoleh dikarakterisasi meliputi: uji kandungan lembab, uji kandungan obat, uji gugus fungsi dan uji disolusi. Selanjutnya, dispersi padat kurkumin polivinilpirolidon K-30 tersebut dicetak menjadi tablet kunyah dengan metode kempa langsung dalam tiga formula, yaitu Formula A (Avicel PH 102 10%), Formula B (Avicel PH 102 15%) dan Formula C (Avicel PH 102 20%). Tablet kunyah dispersi padat kurkumin yang diperoleh dievaluasi yang mencakup kekerasan, keregasan, keseragaman kandungan dan disolusi tablet. Berdasarkan hasil yang diperoleh tablet formula C merupakan formula terbaik dengan kandungan tertinggi pada uji disolusi (99,3%) dalam 60 menit, dilanjutkan dengan kekerasan dan kekerasan yang memenuhi persyaratan berturut-turut yaitu 8,07 Kp dan 0,37%. Oleh karenanya, dapat disimpulkan bahwa Formula C dengan kandungan Avicel PH 102 20% b/b merupakan formula terbaik untuk tablet kunyah kurkumin.

.....Curcumin is a phenolic compound shown to have various pharmacological effects, but is rarely formulated in oral dosage form because it has low solubility in water. To enhance the solubility rate of curcumin in water, curcumin is formulated into a solid dispersion. This research aimed to obtain chewable tablets of curcumin-polyvinylpyrrolidone solid dispersion with stevia extract sweetener. A solid dispersion of curcumin was prepared using polyvinylpyrrolidone K-30 in a ratio of 1:10. The solid dispersion of curcumin obtained was characterized including: moisture content, drug content, functional group and dissolution profile. Furthermore, the solid dispersion of curcumin-polyvinylpyrrolidone K-30 was prepared into chewable tablets by direct compression method in three formulas, which were Formula A (Avicel PH 102 10%), Formula B (Avicel PH 102 15%) and Formula C (Avicel PH 102 20%). The obtained chewable tablets of the curcumin solid dispersion were evaluated in terms of hardness, friability, content uniformity and dissolution. Based on the results, the best formula was Formula C with the highest curcumin release (99.3%) in 60 minutes, as well as the acceptable hardness and friability of 8.07 Kp and 0.3%, respectively. Therefore, it can be concluded that formula C that containing Avicel PH 102 20% w/w is the best formula for the curcumin chewable tablet.