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PENGARUH KONSENTRASI HPMC SEBAGAI *SUSPENDING AGENT* TERHADAP SIFAT FISIK DAN PENETAPAN KADAR SUSPENSI IBUPROFEN

ABSTRAK

Latar belakang: Ibuprofen merupakan salah satu obat golongan AINS yang diperkenalkan pertama kali di banyak negara. Ibuprofen bersifat analgesik, antiinflamasi dan antipiretik. Kelarutan ibuprofen praktis tidak larut dalam air, sehingga dalam pembuatan diperlukan cairan pembawa untuk menstabilkannya, oleh karena itu untuk mendapatkan bentuk sediaan yang stabil ibuprofen dapat dibuat dalam bentuk sediaan suspensi, dengan bertujuan untuk mengevaluasi pengaruh konsentrasi HPMC sebagai suspending agent terhadap sifat fisik suspensi ibuprofen dan mengevaluasi konsentrasi ibuprofen dalam sediaan suspensi.

Metode: Merancang formula, membuat sediaan, dan mengevaluasi sediaan suspensi. Variasi konsentrasi *suspending agent* HPMC digunakan yaitu 0,5%, 0,75% dan 1%. Evaluasi yang dilakukan meliputi organoleptik, homogenitas, pH, viskositas, bobot jenis, sedimentasi. Pengukuran kadar suspensi ibuprofen dengan menggunakan alat Spektrofotometer UV-Vis pada panjang gelombang 220,50 nm. Analisis data dilakukan pengujian melalui SPSS dengan versi 23.

Hasil: Pengujian mutu fisik suspensi berdasarkan parameter organoleptik (bentuk, warna, bau, dan rasa) memiliki bentuk cairan, warna putih, bau khas jeruk, rasa agak manis, pH 5, viskositas berkisar 103,5-1057,3 cPs, bobot jenis berkisar 1,090-1,103, (g/ml) ukuran partikel berkisar 4,211-5,812 μm , sedimentasi berkisar 0,84-0,86, dan redispersi berkisar 87%-92%. Kadar suspensi ibuprofen diperoleh F1 sebesar 99,86 %, F2 sebesar 105,163 %, F3 sebesar 103,503 %.

Kesimpulan: Pengujian mutu fisik suspensi ibuprofen berdasarkan parameter organoleptik, pH, viskositas, bobot jenis, ukuran partikel, sedimentasi, redispersi memenuhi syarat sesuai lieteratur. Kadar suspensi ibuprofen memenuhi syarat 90-110%.

Kata kunci: Formulasi, suspensi, ibuprofen, *HPMC*, penetapan padar.

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**THE EFFECT OF HPMC LEVELS AS A SUSPENDING AGENT ON THE
PHYSICAL PROPERTIES OF IBUPROFEN SUSPENSION LEVELS**

ABSTRACT

Background: *Ibuprofen is one of the NSAID class drugs which was first introduced in many countries. Ibuprofen is analgesic, anti-inflammatory and antipyretic. The solubility of ibuprofen is practically insoluble in water, so a carrier liquid is needed to stabilize it in manufacturing, therefore to obtain a stable dosage form ibuprofen can be made in suspension dosage form, with the aim of evaluating the effect of the concentration of HPMC as a suspending agent on the physical properties of the ibuprofen suspension and evaluate the concentration of ibuprofen in suspension preparations.*

Methods: *Designing formulas, making preparations, and evaluating suspension preparations. Variations in the concentration of the HPMC suspending agent used were 0.5%, 0.75% and 1%. The evaluation includes organoleptic, homogeneity, pH, viscosity, specific gravity, sedimentation. Measurement of levels of ibuprofen suspension using a UV-Vis spectrophotometer at a wavelength of 220.50 nm. Data analysis was tested through SPSS with version 23.*

Results: *Testing the physical quality of the suspension based on organoleptic parameters (shape, color, odor, and taste) has a liquid form, white color, characteristic orange odor, slightly sweet taste, pH 5, viscosity ranges from 103.5 to 1057.3 cPs, specific gravity ranges from 1.090 -1.103, (g/ml) particle size ranges from 4.211-5.812 μm , sedimentation ranges from 0.84-0.86, and redispersion ranges from 87%-92%. The level of ibuprofen suspension obtained by F1 was 99.86%, F2 was 105.163%, F3 was 103.503%.*

Conclusion: *Testing the physical quality of the ibuprofen suspension based on organoleptic parameters, pH, viscosity, specific gravity, particle size, sedimentation, redispersion met the requirements according to the literature. The level of ibuprofen suspension meets the requirements of 90-110%.*

Keywords: *Formulation, suspension, ibuprofen, HPMC, assay.*