

Pengaruh surfaktan terhadap laju disolusi beberapa sediaan padat

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Abstrak

Masalah disolusi zat aktif obat dalam sediaan: padat oral banyak mendapat perhatian mengingat bahwa laju disolusi obat memegang peranan yang penting dalam merencanakan " bioavailabilitas dan bioekivalensi " obat secara in vitro.

Banyak metoda yang telah dilakukan dalam usaha meningkatkan laju disolusi dan obat, khususnya yang mempunyai kelarutan yang rendah dalam air atau cairan lambung...

Dari sekian banyak metoda-metoda, kami memilih untuk mempelajari pengaruh polisorbat 80, dioktil sodium sulfo suksinat dan glisin terhadap laju disolusi piroksikam dan kloramfenikol.

Metoda yang kami lakukan dalam penelitian ini adalah metoda kristalisasi, metoda penambahan langsung dan metoda granulasi basah. Adapun uji laju disolusi dilakukan dengan metoda It basket ' pada kecepatan rotasi 100 rpm, sebagai media disolusi digunakan HCl 0,1 N, pada temperatur 37°C ± 0,5°C. Sampel diambil pada menit ke 5, 10, 15, 20, 25, 30, 45 dan 60 setelah percobaan dimulai. Jumlah obat yang melarut dalam media disolusi ditentukan dengan spektrofotometer u.v. pada panjang gelombang maksimumnya, dimana untuk piroksikam pada λ 334 nm, dan kloramfenikol pada λ 278 nm dibandingkan terhadap larutan standar pembanding.

Hasil penelitian menunjukkan bahwa pengaruh adanya polisorbat 80 pada piroksikam baik dengan metoda kristalisasi dengan kadar 2,5 % atau metoda granulasi basah dan pencampuran langsung dengan kadar 2,0 % meningkatkan laju disolusinya, demikian pula metoda granulasi basah dengan glisin kadar 2,0 %.

Metoda kristalisasi kloramfenikol dalam larutan polisorbat 80 2,5 % maupun polisorbat 80, dioktil sodium sulfo suksinat dan glisin dengan kadar 17,5 % baik dengan metoda pencampuran langsung maupun metoda granulasi basah tidak meningkatkan laju disolusi kloramfenikol.

.....The problems in drug dissolution of solid, oral dosage forms draw attention, because drug dissolution rate

plays important role in predicting H bioavailability and bioequivalent it of drug in vitro.

Many methods have been done to increase the drug dissolution rate, especially for those which have slight solubility in water or gastric liquid. Among those methods, we chose to observe the effect of the addition of polysorbate 80, dioctyl sodium sulfo succinate and glycine in the increasing the dissolution rate of piroxicam and chioramphenicol.

The methods carried out in the experiment were crystallization method, direct mixing method and wet granulation method. Observation of the dissolution rate were done using the U basket's method 11 on the rotation rate of 100 rpm, with HCl 0,1 N as medium at temperature of 37.0 ± 0.5°C. The sample were taken. on 5th, 10th, 15th, 20th

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25th

30th, 45th, and 60th minutes after the experiment had been started. The amount of drug that dissolved in the dissolution medium were determined by using ultraviolet spectrophotometer at their maximum wavelength, that is at 334 nm for piroxicam, and 278 nm for chioramphenicol by comparing to the standard solution the original drug which concentration had already been known.

The experiment showed that the addition of 2,5 % solution of polysorbate 80 in the crystallization method of piroxicam or 2,0 % concentration in wet granulation method and direct mixing method could increase their dissolution rate, and also the addition of glycine 2,0 % and gave the same effect in wet granulation method.

While in chloramphenicol the existence of surfactants polysorbate 80 2,5 %, polysorbate 80, dioctyl sodium sulfo succinate and glycine 17,5 % couldn't increase the dissolution rate in all three methods mentioned above.