INTISARI

Pentagamavunon-0 (PGV-0) merupakan senyawa hasil modifikasi struktur kurkumin yang larut dalam etanol 3,8 mg/5 mL dan dalam metanol 14,9 mg/mL. Kelarutan PGV-0 yagn rendah di dalam air, menyebabkan PGV-0 sulit diabsorpsi memiliki bioavailabilitas rendah di dalam tubuh. Natrium benzoat merupakan zat hidrotrop yang mampu meningkatkan kelarutan dari obat yang sukar larut. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan natrium benzoat, dan variasi pH larutan dapar fosfat, sesrta mengetahui nilai parameter termodinamika pada suhu percobaan (30^0C ± $0,5^0$C, 40^0C ± $0,5^0$C, and 50^0C ± $0,5^0$C).

Uji kelarutan PGV-0 diawali dengan penetapan waktu kelarutan jenuh PGV-0 di dalam sistem hidrotropik natrium benzoat. Uji kelarutan PGV-0 dilakukan menggunakan pelarut larutan natrium benzoat pada konsentrasi 0,5 M, 1,0 M, 1,5 M dalam larutan dapar fosfat pH 4,2;6,2;8,2, pada suhu 30^0 C, 40^0 C, dan 50^0 C. Kelarutan PGV-0 dibaca menggunakan spektrofotometri visibel pada panjang gelombang serapan maksimum PGV-0 420 nm, dan dianalisis menggunakan uji statistik Kruskal Wallis.

Hasil penelitian menunjukkan bahwa kelarutan PGV-0 di dalam sistem hidrotropik natrium benzoat dengan variasi kadar natrium benzoat memiliki nilai $p<0,05$, sedangkan dengan variasi nilai pH larutan dapar fosfat bernilai $p>0,05$. Proses kelarutan PGV-0 berlangsung secara tidak spontan dan eksotermis ($\Delta F>0$, $\Delta H<0$), pada pelarut natrium benzoat di dalam larutan buffer pH 4,2 dan 6,2, sedangkan pada pH 8,2 berlangsung secara endotermik ($\Delta H>0$).

Kata Kunci : p*entagamavunon-0, kelarutan, hidrotropik, natrium benzoat*

ABSTRACT

Pentagamavunon-0 (PGV-0) is a compound of modified curcumin structure that dissolves in ethanol 3,8 ml/5mL, and methanol 14,9 ml/mL. The poor solubility of PGV-0 in water causes PGV-0 is difficult to be absorbed and has low solubility in body. Sodium benzoat is a hydrotropic agent which is capable of increasing solubility of poorly soluble drug. The purpose of this study was to observe the effect of sodium benzoat addition and pH variation of phosphate buffer solution on PGV-0 solubility test. In addition, the aim was also to know the termodynamic parameter value in PGV-0 solubility test at experimental temperature (30^0C ± $0,5^0$C, 40^0C ± $0,5^0$C, and 50^0C ± $0,5^0$C).

The study was started by determining saturation solubility time of PGV-0 in sodium benzoat hydrotropic system. The solubility test of PGV-0 was carried out by using sodium benzoat as solvent with vary of concentration of 0 M, 0,5 M, 1,0 M, 1,5 M, and 2,0 M in three different pH of phospate buffer solution (4,2;6,2;8,2) at experimental temperature. PGV-0 solubility was performed by visible spectrophotometry at maximum absorption wavelength of PGV-0 420 nm, and were analyzed by Kruskal Wallis statistic test.

The result showed that PGV-0 solubility in sodium benzoat hydrotropic system with variation of sodium benzoat concentration had p<0,5m and with pH variation of phosphate buffer solution had p>o,5. PGV-0 solubility process took place spontaneously and exothermically ((ΔF>0, ΔH <0) in sodium benzoat solution at pH 4,2 and 6,2 of phosphate buffer solutions, whereas endothermically (ΔH >0) at pH 8,2. of phosphate buffer solution.

Key words : *pentagamavunon-0, solubility, hydrotropic , sodium benzoate*