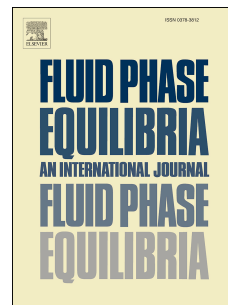


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Solubility and dissolution characteristics of capecitabine in pure lower alcohols and water with methanol mixture solvents at atmospheric pressure and different temperatures

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1 Solubility and dissolution characteristics of
2 capecitabine in pure lower alcohols and water
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9 Abstract: Capecitabine is a widely used anticancer prodrug of 5-fluorouracil, but up to
10 the present time there is no solubility data reported other than in supercritical carbon
11 dioxide. In this paper, by the polythermal method, the solubility data of capecitabine in
12 fifteen pure lower alcohols and water with methanol mixture solvents were measured
13 from 278.15 K to 323.15 K under atmospheric pressure. The results show that the
14 solubility of capecitabine in linear lower alcohols are bigger than that in corresponding
15 branch chain lower alcohols, and decrease with the increasing of carbons in alkyl of
16 alcohols. Moreover, the solubility of capecitabine increases with the increasing of
17 temperature and mole fraction of methanol in the binary solvent mixtures of water +
18 methanol. To expand industrial application of experimental solubility data of
19 capecitabine in recrystallization, the values measured in selected pure lower alcohols are
20 correlated using the modified Apelblat equation, the Buchowski-Ksiazczak-pletrzyk
21 equation, the van't Hoff equation, the Wilson model and the NRTL model; And for the
22 binary solvent system, the modified Apelblat equation and Jouyban-Acree model are

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