

Effects of Free Fatty Acids on Phase Equilibrium of Model Bile

M.-Z. Ge and X.-Q. An^{C, S}

College of Chemistry and Environment Science, Nanjing Normal University, Nanjing, China
anxueqin@njnu.edu.cn

Gallstone disease is the most common gastrointestinal disease. The formation of cholesterol-enriched gallstone is a complicated result of various factors in human bile system. The studies of effects of various factors on the phase equilibrium in the model bile are a great significance on the prevention and cure of the illness concerning the cholesterol gallstone. In this work, the effects of oleic acid on phase equilibrium of model bile have been studied. The high performance liquid chromatography has been used to determine simultaneously the concentrations of cholesterol, lecithin and bile salts in humane model bile. The saturation solubility curves of cholesterol in the model bile have been obtained. The experimental results reveal that the oleic acid could influence the phase equilibrium of model bile and the stability of model bile decrease with the increase of concentration of the oleic acid.

Acknowledgment. This work was supported by the National Natural Science Foundation of China (No. 20173024, 20273032, 20473035 and 20573056) and the New Technique Foundation of Jiangsu Province, P. R. China (No. BG-2005041).