

High Speed Separation of Glycyrrhizin utilizing Extreme High Pressure Liquid Chromatography System (*X- μ LC*[®])

Introduction

Glycyrrhizin is the main component of liquorice root and is used as a flavoring in candies, pharmaceuticals, and tobacco products. We examined the applicability of an X-PressPak C18S column (2.1 mm I.D. x 50 mm L.) packed with 2 μ m diameter packing material for the ultra-high speed separation of the above drug. The results were examined to determine whether the performance of the column and chromatography separation exceeds those of conventional HPLC.

Experimental

The chromatography utilized in this experiment was a JASCO *X- μ LC* system consisting of a 3185PU pump, 3080DG degasser, 3067CO column oven, 3070UV UV/Vis detector, 3059AS auto sampler and a chromatography data system.

Results and Discussion

Figure 1 shows the separation of a standard mixture of glycyrrhizin (0.25 mg/mL) and propyl paraben (0.05 mg/mL). The *X- μ LC* system provides an analysis time 10 times shorter than conventional HPLC while the reproducibility of the peak ratio is 0.16%. These results well exceed those of conventional HPLC.

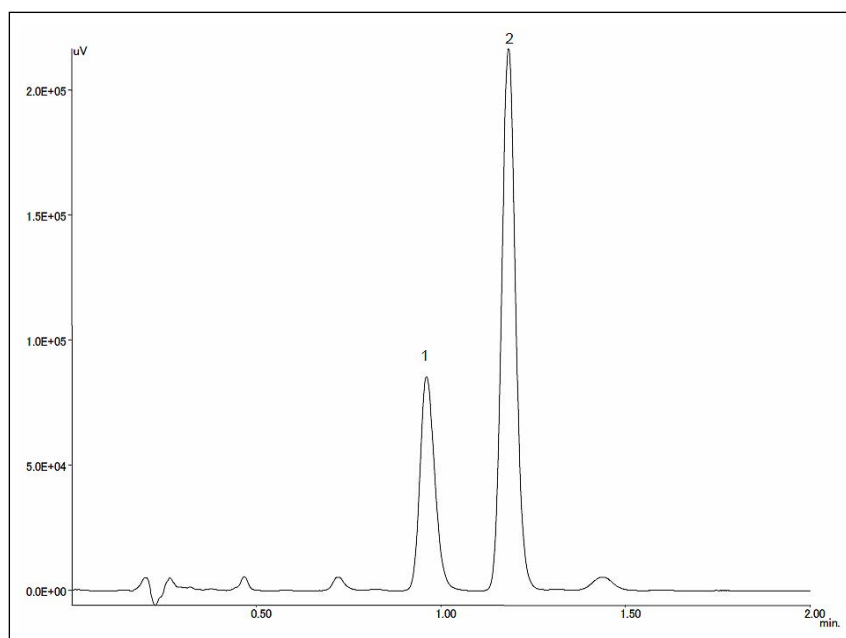


Figure 1 Chromatogram of a standard mixture of glycyrrhizin and propyl paraben. Peaks: 1=glycyrrhizin (0.25 mg/mL), and 2=propyl paraben (0.05 mg/mL). Chromatographic conditions: column=X-PressPak C18S (2.1 mm I.D. x 50mm L.), mobile phase=2.07% acetic acid/methanol (60/40), flow rate=0.5 mL/min, column temperature=25^o C, detection wavelength=254 nm, injection volume=1 μ L.