Application Note

747007X

High Speed Separation of Disulfiram utilizing Extreme High Pressure Liquid Chromatography System (X-LC®)

Introduction

Disulfiram is a drug used to treat chronic alcoholism. by producing an acute sensitivity to alcohol.
We examined the utility of an X-PressPak C18S column (2.1 mm I.D. x 50 mm L.) packed with 2 µm 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 exceed those of conventional HPLC.

Experimental

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

Results and Discussion

Figure 1 shows the separation of a standard mixture of benzophenone (0.005 mg/mL) and disulfiram (0.005 mg/mL). The X-LC system provides an analysis time 7 times shorter than conventional HPLC while the resolution between the benzophenone and disulfiram was 5.4; the reproducibility of the peak ratio is 0.44%. These results well exceed those of conventional HPLC.

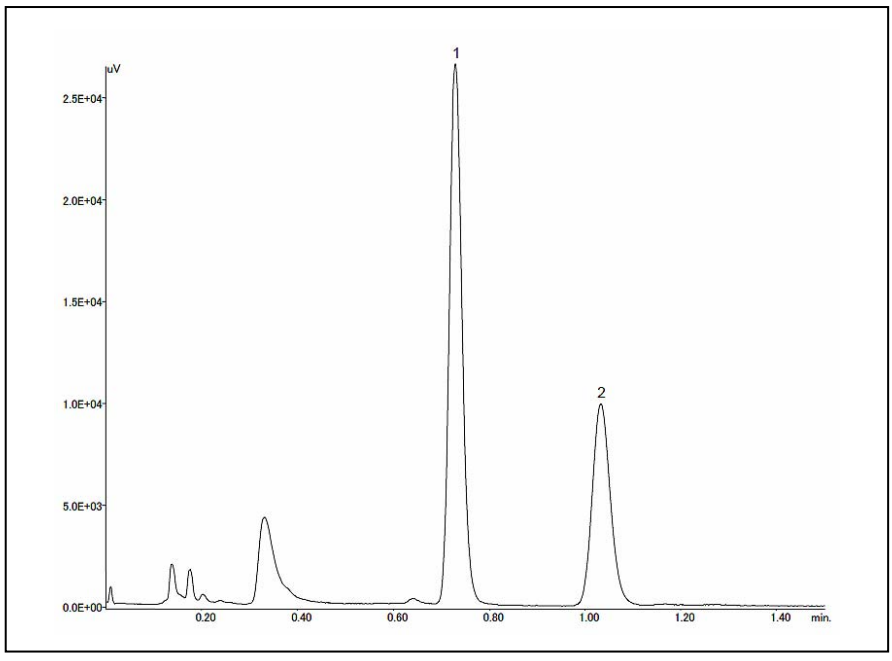

Figure 1 X-LC chromatogram of a standard mixture of benzophenone and disulfiram Peak: 1=benzophenone (0.005 mg/mL), 2=disulfiram (0.005 mg/mL) Chromatographic conditions: Column=X-PressPak C18S (2.1 mm I.D. x 50 mm L.), Mobile phase=CH_3OH/H_2O(70/30), Column temperature=25 ºC, Flow rate=0.6 mL/min, Detection wavelength=210 nm, Injection volume=1 µL

copyright©JASCO Corporation

JASCO INTERNATIONAL CO., LTD
4-21, Sennin-cho 2-chome, Hachioji, Tokyo 193-0835, Japan
Tel: +81-42-666-1322, Fax: +81-42-665-6512