

Electronic Supplementary Information for:

Simultaneous determination of sucrose and sunset yellow in different abundance by combining RI and TL detectors without separation

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1.0 Calibrations of RBI and TL

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1.0 Calibrations of RBI and TL and sample analysis

For static measurements without separation, the signals were all plane stages in stead of peaks. Figure 1 shows the calibrations of sucrose in RBI channel and sunset yellow in TL channel. The sucrose for each step was from 22mg/ml to 28mg/ml. The concentration of sunset yellow was from 4.32 μ g/ml to 21.75 μ g/ml.

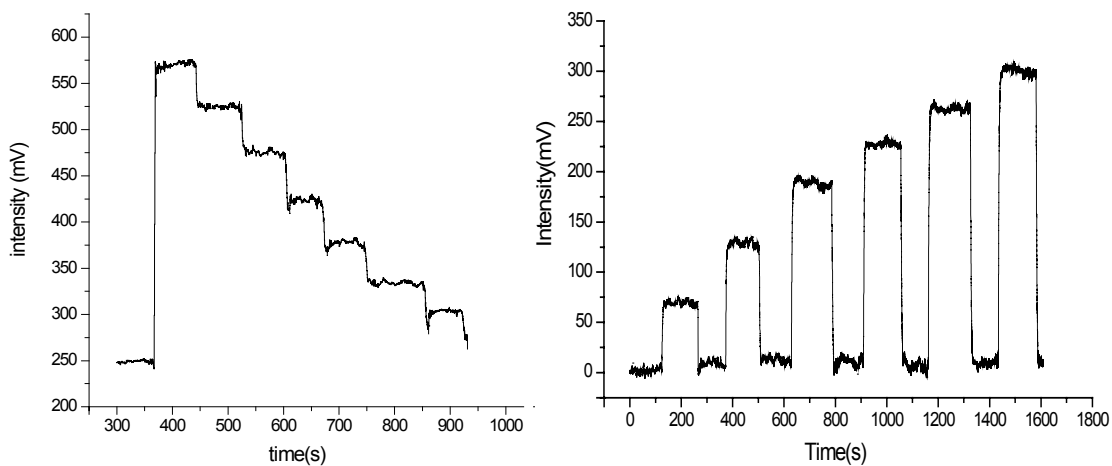


Figure 1. The calibration of RBI and TL

2.0 HPLC experiment

HPLC analysis was conducted on an Agilent 1100 instrument equipped with a diode array detector (PAD) and a refractive index detector (RI), a quaternary solvent delivery pump, an on line vacuum degasser, a manual sampler and Chemstation software (Agilent Technologies, CA, USA). The separation of sucrose was carried out on an amino column (4.6mm×150mm, 5µm) under the following chromatographic conditions: sample injection volume, 10µl; column temperature, 40°C; flow-rate, 1.0mL/min. The eluents were water and acetonitrile (25+75). The separation of sunset yellow was carried out on an YWG-C18 column (4.6mm×250mm, 10µm) under the following chromatographic conditions: sample injection volume, 10µl; flow-rate, 1ml/min. the eluents were methanol (A) and acetic ammonium (0.02mol/L) (B). the following multi-step linear gradient profile was applied: 20%-35% A (3min), 35%-98% A (9min), 98% A (6min). UV spectra were recorded between 190 and 400nm and the chromatographic profiles were recorded at 225nm.¹ Figure 2 and 3 were the results of HPLC.

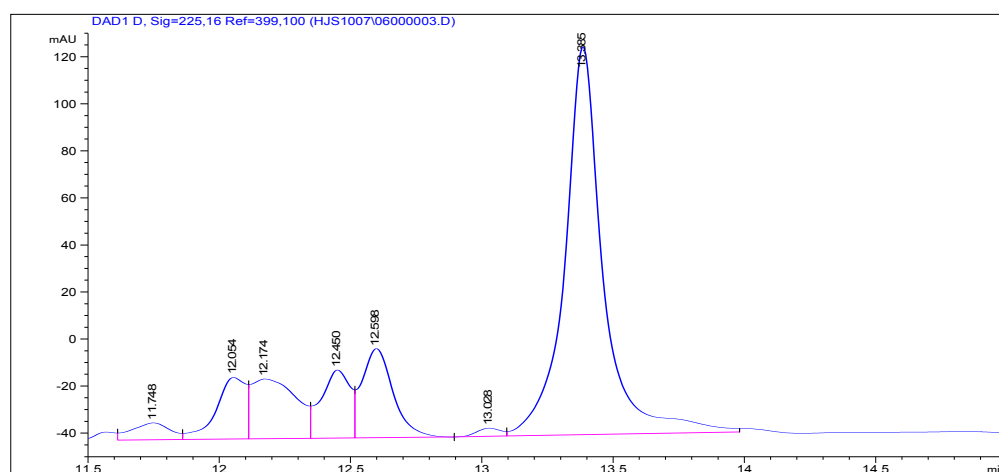


Figure 2 the chromatogram of sunset yellow in the sample

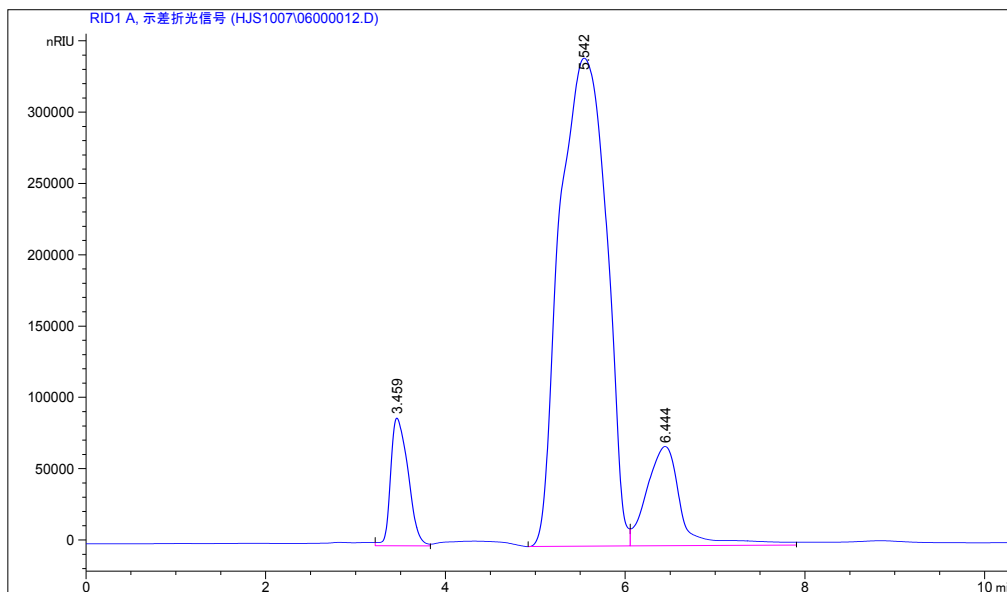


Figure 3 the chromatogram of sucrose in the sample

The results obtained from HPLC was that the sample contained 120mg/ml sucrose and 49.56 μ g/ml. We got the sucrose in the sample was 125mg/ml, as this was the concentration of the total sugars in the sample. After the separation of HPLC, the result was the sucrose only.

References:

1. GB/T 5009.8-2008; GB/T 5009.35-2003; STANDARDS PRESS OF CHINA;