

APPLICATION

Simple Sugars Analysis from Soy Sauce by ELSD using Strata® ABW and Luna® Omega SUGAR LC Column

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Overview

Presented is an analysis for sugar content in Soy Sauce by LC-ELSD. The final method makes use of a cation-anion mixed mode ion exchange solid phase extraction (SPE) sorbent, Strata ABW to remove potential matrix interference from the sample while also removing salt ions which facilitated the successful analysis of key sugars.

Sample Preparation

Sample Pre-Treatment

1. ~1 mL of sample diluted in 9 mL of Milli-Q® Water
2. Vortex at 4700 RPM
3. Pass supernatant through a Phenex™ Nylon 25 mm syringe filter
4. Take sample and perform solid phase extraction step

Solid Phase Extraction Protocol (Non-Retentive)

SPE Column: Strata ABW 2 g/12 ml Tube

Part No.: 8B-S030-KDG

Condition: Not Required

Load Sample: 10 mL (from sample pre-treatment step) – to prevent further dilution of sample, compressed air was used to push sample through (positive pressure)

Elute and Collect: Elute thoroughly to bed dryness and collect entire loaded sample – after the visible sample volume has soaked into the sorbent with about 1.5 mL visibly collected, the vacuum pressure can be increased to expedite full elution.

Analysis: Transfer aliquot of collected eluent directly into an autosampler vial for injection onto the LC.

LC-ELSD Conditions

Analytical Column: Luna Omega 3 µm SUGAR

Dimensions: 150 x 4.6 mm

Part No.: 00F-4775-E0

Mobile Phase: A: Water

B: Acetonitrile/Isopropanol/Water (90:5:5)

Gradient:	Time (min)	% B
	0	90
	0.5	90
	15.5	70
	17	70
	18	90
	20	90

Flow Rate: 1 ml/min

Temperature: 35 °C

Injection Volume: 0.5 µL

Detection: ELSD

Sample: 1. Sucrose

*Matrix peak



Figure 1.
Traditional Low Sodium Soy Sauce (Pre – Strata ABW SPE clean-up)

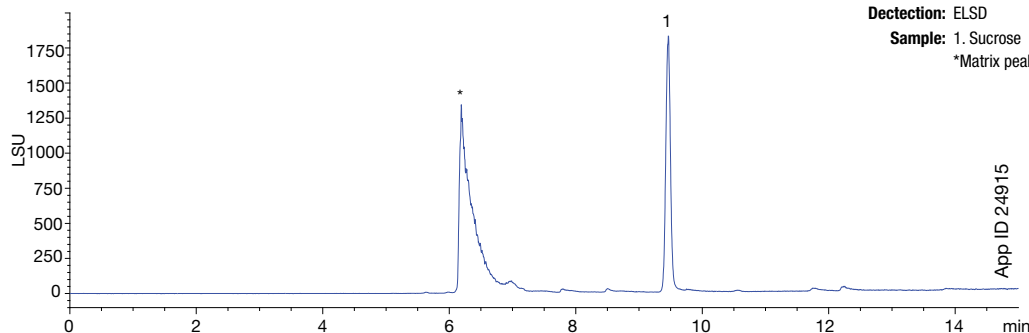
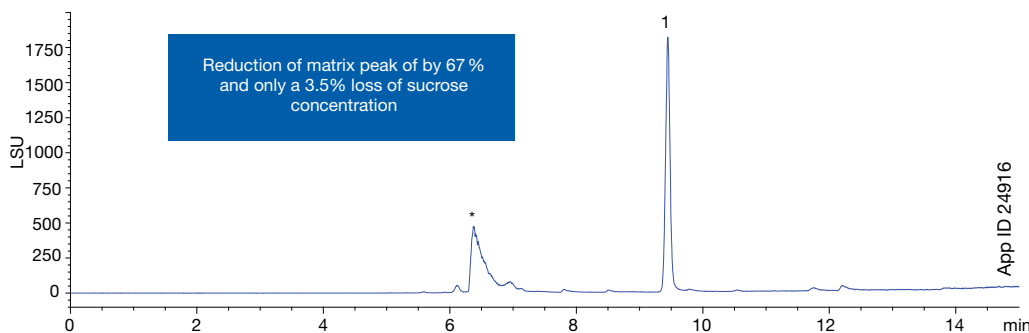


Figure 2.
Traditional Low Sodium Soy Sauce (Post – Strata ABW SPE Clean-up)



APPLICATION

Luna® Omega Sugar Ordering Information

3 µm Minibore Columns (mm)				SecurityGuard™ Cartridges (mm)
Phases	50 x 2.1	100 x 2.1	150 x 2.1	4 x 2.0*
				/10pk
SUGAR	00B-4775-AN	00D-4775-AN	00F-4775-AN	AJO-4496

for ID: 2.0-3.0 mm

3 µm MidBore™ Columns (mm)		SecurityGuard Cartridges (mm)
Phases	150 x 3.0	4 x 2.0*
		/10pk
SUGAR	00F-4775-YO	AJO-4496

for ID: 2.0-3.0 mm

3 µm Analytical Columns (mm)				SecurityGuard Cartridges (mm)
Phases	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0*
				/10pk
SUGAR	00D-4775-E0	00F-4775-E0	00G-4775-E0	AJO-4495

for ID: 3.2-8.0 mm



* SecurityGuard Standard Analytical Cartridges require holder, Part No.: KJO-4282

Strata® ABW Ordering Information

Sorbent Mass	Part No.	Unit/Box
Tube		
1 g	8B-S030-JCH	6 mL (30/Box)
Giga Tube		
2 g	8B-S030-KDG	12 mL (20/Box)
5 g	8B-S030-LEG	20 mL (20/Box)
10 g	8B-S030-MFF	60 mL (16/Box)
20 g	8B-S030-VFF	60 mL (16/Box)

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Strata-X is patented by Phenomenex. U.S. Patent No. 7,119,145
SecurityGuard is patented by Phenomenex. U.S. Patent No. 6,162,362

CAUTION: this patent only applies to the analytical-sized guard cartridge holder, and does not apply to SemiPrep, PREP or ULTRA holders, or to any cartridges.

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