

Sucrose and Lactose in Milk Powder

Purospher® Star NH2

Chromatographic Conditions

Column: Purospher® Star NH2 (5 µm) 250x4.6 mm 1.51913.0001

Injection: 10 µL

Detection: RI

Cell: 1ul/10mm

Flow Rate: 1.0 mL/min

Mobile Phase: Mix Acetonitrile and Milli-Q water 70:30 (v/v)

Temperature: 30 °C

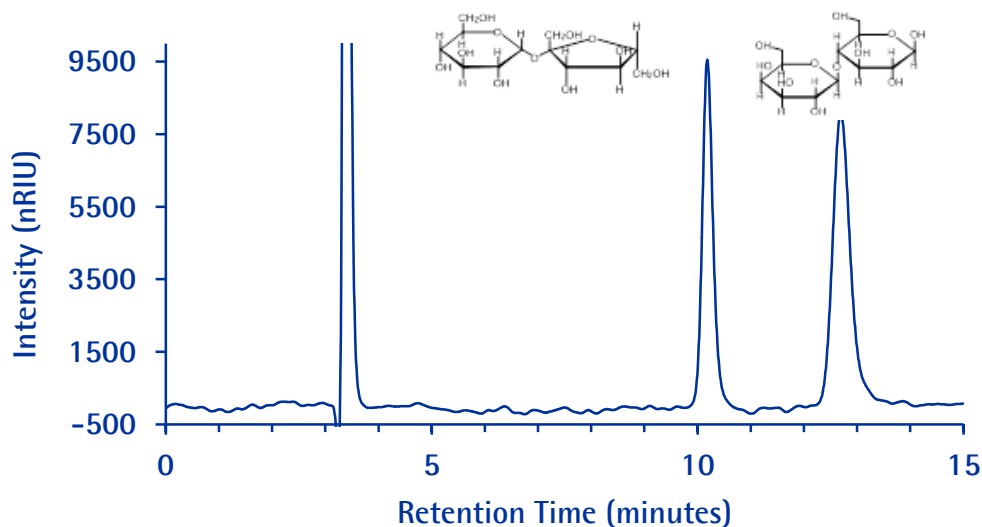
Diluent Mobile phase

0.5mg/mL of Sucrose and 1.0mg/mL of Lactose in mobile phase.

Unknown sample: Weigh 1.0g milk powder into a 50 mL volumetric flask. Add 15 mL H2O.

Sample: Sonicate for 10 minutes. Add ACN to volume. After a few minutes' standing, filtrate the solution, take 5.0 mL supernatant to a 10 mL volumetric flask, add ACN to volume, filter solution (0.45 µm filter) prior analysis.

Pressure Drop: 63 Bar (920 psi)



Chromatographic Data

No.	Compound	Retention Time (min)	Theoretical Plates	Tailing Factor
1	Sucrose	10.2	12891	0.94
2	Lactose	12.7	6294	1.24

Sucrose and Lactose in Milk Powder

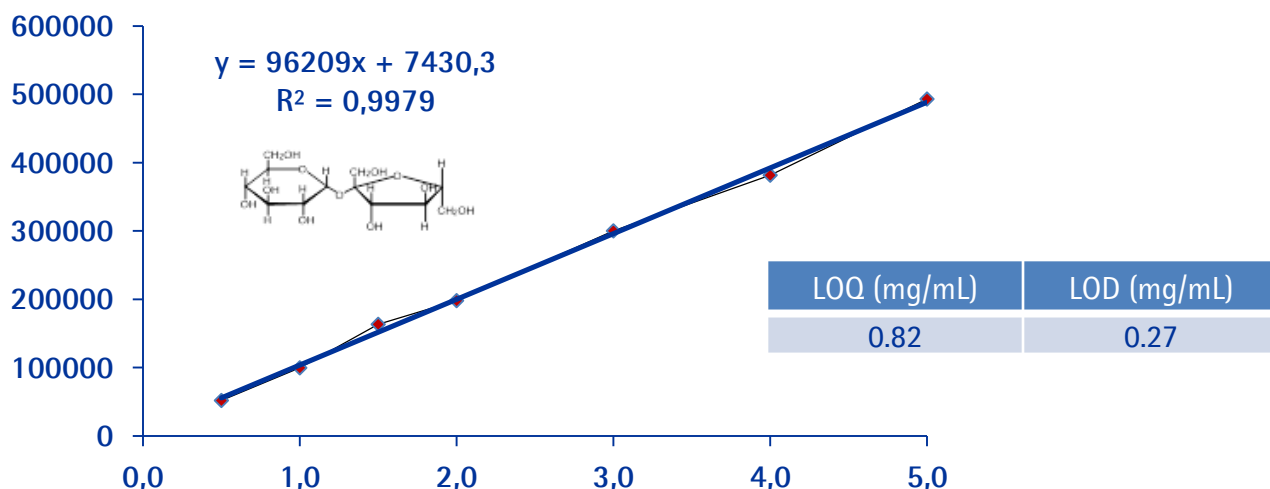
Purospher® Star NH2

Repeatability: Analysis of repeated injections of 3 mg/mL standard solution (n=5).

Standard	Sucrose	Lactose
1	293406	402551
2	291380	408137
3	290066	408708
4	293609	411025
5	293971	408205
Average	292486	407725
STDEV	1687	3124
RSD (%)	0.6	0.8

Linearity – Sucrose: Analysis of repeated injections (n=5) of standard solutions in the calibration range 0.5–5.0 mg/mL.

Concentration (mg/mL)	Intensity (mV)
0.5	51938
1.0	99566
1.5	163224
2.0	198164
3.0	299971
4.0	381782
5.0	492916



Sucrose and Lactose in Milk Powder

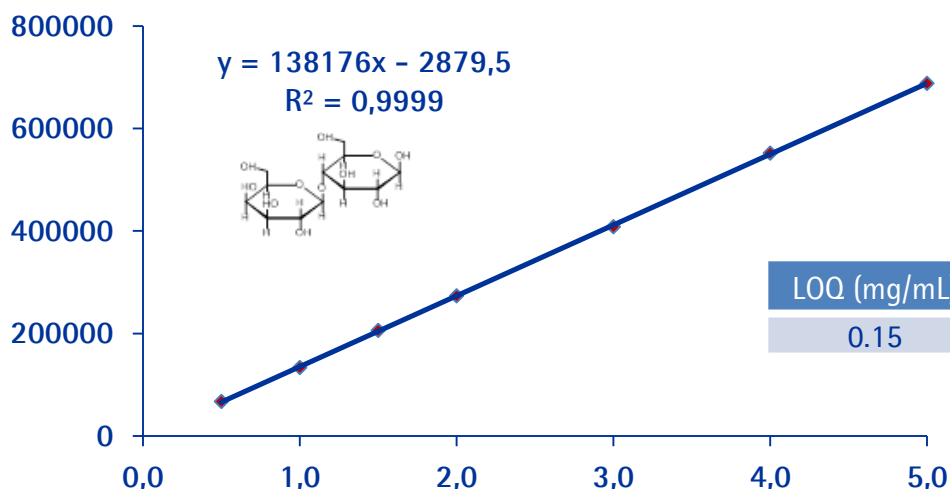
Purospher® Star NH2

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Average	292486	407725
STDEV	1687	3124
RSD (%)	0.6	0.8

Linearity – Lactose: Analysis of repeated injections (n=5) of standard solutions in the calibration range 0.5–5.0 mg/mL.

Concentration (mg/mL)	Intensity (mV)
0.5	67284
1.0	133593
1.5	206165
2.0	273730
3.0	408205
4.0	551681
5.0	688177

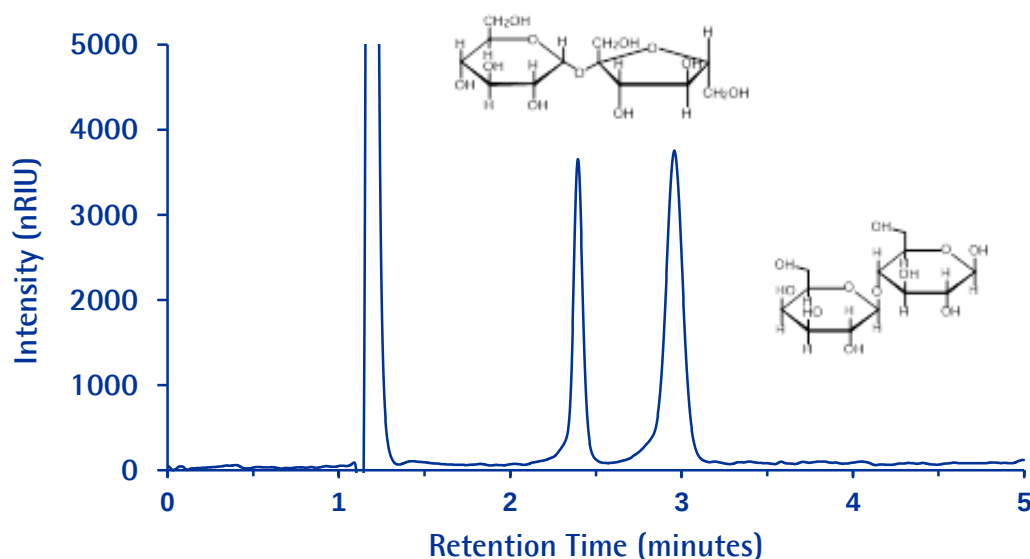


Sucrose and Lactose in Milk Powder

Chromolith® Performance NH2

Chromatographic Conditions

Column:	Chromolith® Performance NH2, 100x4.6 mm	1.52028.0001
Injection:	5 µL	
Detection:	RI	
Cell:	1ul/10mm	
Flow Rate:	1.5 mL/min	
Mobile Phase:	Mix Acetonitrile and Milli-Q water 70:30 (v/v)	
Temperature:	30 °C	
Diluent	Mobile phase	
	0.5mg/mL of Sucrose and 1.0mg/mL of Lactose in mobile phase.	
Sample:	Unknown sample: Weigh 1.0g milk powder into a 50 mL volumetric flask. Add 15 mL H2O. Sonicate for 10 minutes. Add ACN to volume. After a few minutes' standing, filtrate the solution, take 5.0 mL supernatant to a 10 mL volumetric flask, add ACN to volume, filter solution (0.45 µm filter) prior analysis.	
Pressure Drop:	33 Bar (479 psi)	



Chromatographic Data

No.	Compound	Retention Time (min)	Theoretical Plates	Tailing Factor
1	Sucrose	2.4	8732	0.93
2	Lactose	3.0	4019	0.87

Sucrose and Lactose in Milk Powder

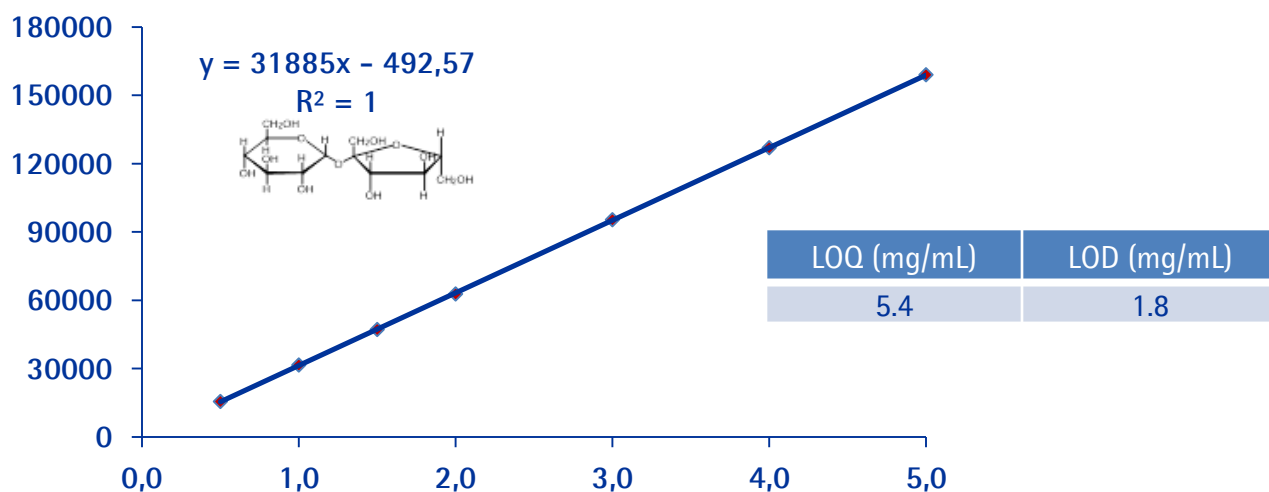
Chromolith® Performance NH2

Repeatability: Analysis of repeated injections of 3 mg/mL standard solution of sucrose and a 6 mg/mL standard solution of sucrose(n=5).

Standard	Sucrose	Lactose
1	95582	176824
2	95212	175893
3	96269	177697
4	95519	174698
5	95864	176520
Average	95689	176327
STDEV	398,5	1118
RSD (%)	0.4	0.6

Linearity – Sucrose: Analysis of repeated injections (n=5) of standard solutions in the calibration range 0.5–5.0 mg/mL.

Concentration (mg/mL)	Intensity (mV)
0.5	15611
1.0	31642
1.5	47135
2.0	62787
3.0	95382
4.0	127048
5.0	158987



Sucrose and Lactose in Milk Powder

Chromolith® Performance NH2

Repeatability: Analysis of repeated injections of 3 mg/mL standard solution of sucrose and a 6 mg/mL standard solution of lactose (n=5).

Standard	Sucrose	Lactose
1	95582	176824
2	95212	175893
3	96269	177697
4	95519	174698
5	95864	176520
Average	95689	176327
STDEV	398,5	1118
RSD (%)	0.4	0.6

Linearity – Lactose: Analysis of repeated injections (n=5) of standard solutions in the calibration range 1.0-10.0 mg/mL.

Concentration (mg/mL)	Intensity (mV)
1.0	28243
2.0	58123
4.0	98308
5.0	135866
6.0	176673
8.0	234709
10.0	292561

