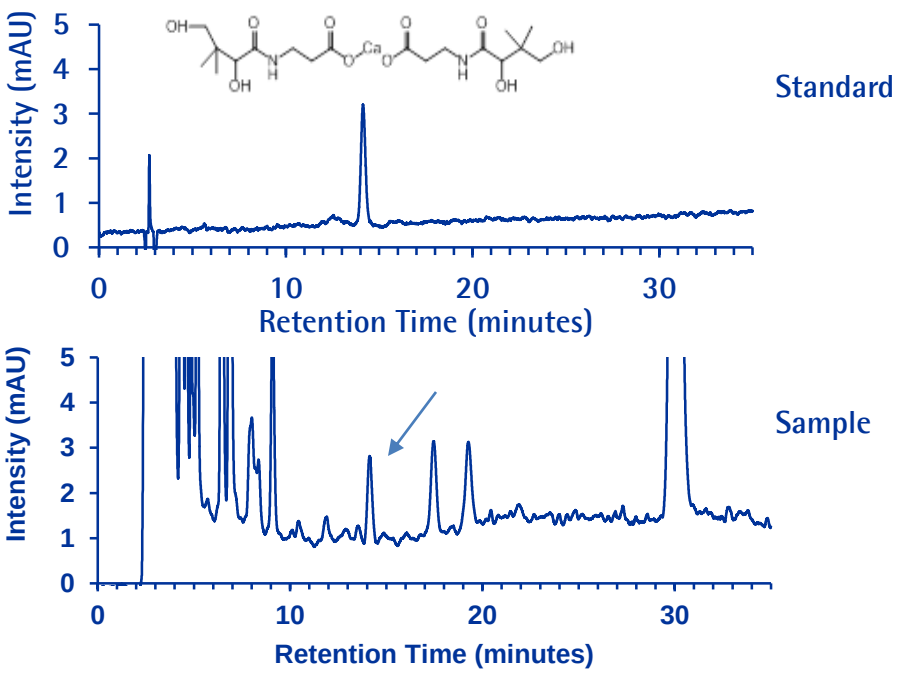
Pantothenic acid in Milk Powder

Purospher® STAR RP-18 endcapped

Chromatographic Conditions

Column:	Purospher® Star RP-18 endcapped (5 µm) 250x4.6 mm	1.51456.0001
Injection:	10 µL	
Detection:	UV@ 450 nm	
Cell:	1ul/10mm	
Flow Rate:	1.0 mL/min	
Mobile Phase:	50mM KH2PO4 aqueous solution. Dissolve 6.8g KH2PO4 in 1L H2O. Adjust pH to 3.0 with H3PO4. Mix Methanol and KH2PO4 aqueous solution 10:90 (v/v).	
Temperature:	30 °C	
Diluent	water	
Sample:	Weigh 5.0g milk powder into a 150-mL triangular flask. Add 30 mL of 40°C~50°C water, sonicate for 20 minutes. After the solution is cool down to room temperature, adjust pH value to 4.5 ± 0.1 with 0.1 mol/L of HCl solution, Add 5 mL of ZnSO4 solution(containing ZnSO4,15g/100mL). Transfer solution to 50-mL volumetric flask, add H2O to volume. Filtrate the solution with filter paper and 0.45 µm filter membrane respectively before analysis.	
Pressure Drop:	169 Bar (2450 psi)	



Chromatographic Data

No.	Compound	Retention Time (min)	Theoretical Plates	Tailing Factor
1	Calcium pantothenate	14.1	14450	1.16

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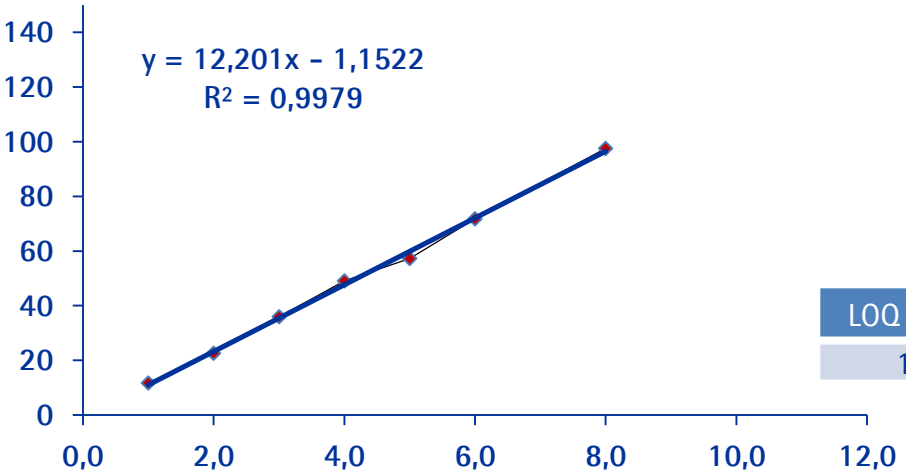
Repeatability: Analysis of repeated injections of 2 ppm (µg/mL) Pantothenate solution (n=5).

Niacin	Intensity (mV)
1	50.231
2	49.981
3	49.994
4	49.553
5	49.993
Average	49.951
STDEV	0.246
RSD (%)	0.5

Linearity: Analysis of repeated injections (n=5) of Pantothenate standard solutions in the calibration range 1-12 ppm (µg/mL).

Concentration (ppm)	Intensity (mV)
1.0	11.685
2.0	22.581
3.0	35.944
4.0	49.033
5.0	57.269
6.0	71.717
8.0	97.537
12.0	138.44



LOQ (ppm)	LOD (ppm)
1.7	0.57