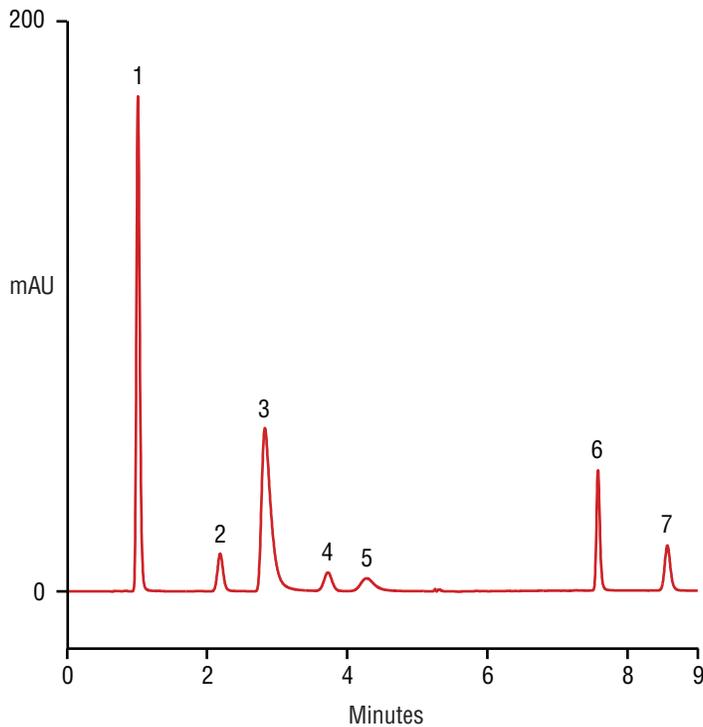


Water-Soluble Vitamin Determination Using a Thermo Scientific™ Acclaim™ Trinity™ P1 Column



Column:	Thermo Scientific™ Acclaim™ Trinity™ P1, 3 µm																			
Dimensions:	3.0 × 50 mm																			
System:	Thermo Scientific™ Dionex™ UltiMate™ 3000 RSLC, Quaternary LPG																			
Mobile Phases:	A: Di-ammonium hydrogen phosphate 6.60 g/L, 85% phosphoric acid 2.64 mL/L, adjust to pH 6.0 with ammonium hydroxide B: Acetonitrile C: DI water																			
Gradient Time (min):	-5.0	0.0	2.5	4.5	8.0	9.0														
%A	10	10	10	80	80	10														
%B	2	2	2	20	20	2														
%C	88	88	88	0	0	88														
Flow Rate:	0.50 mL/min																			
Temperature:	30 °C																			
Injection Volume:	2.0 µL																			
Detection:	UV at 210 nm, 5 Hz, 1 s, blank subtraction																			
Samples:	Standards in water																			
Peaks:	<table border="0"> <tr> <td>1. Niacinamide</td> <td>50 µg/mL</td> </tr> <tr> <td>2. Ascorbic acid</td> <td>125</td> </tr> <tr> <td>3. Pyridoxine</td> <td>50</td> </tr> <tr> <td>4. Pantothenic acid</td> <td>50</td> </tr> <tr> <td>5. Riboflavin</td> <td>10</td> </tr> <tr> <td>6. Thiamine</td> <td>50</td> </tr> <tr> <td>7. Folic acid</td> <td>10</td> </tr> </table>						1. Niacinamide	50 µg/mL	2. Ascorbic acid	125	3. Pyridoxine	50	4. Pantothenic acid	50	5. Riboflavin	10	6. Thiamine	50	7. Folic acid	10
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Water-soluble vitamins are a chemically heterogeneous group including acids, bases, zwitterions, and neutrals with different spectroscopic properties. The amounts in samples can vary from a few micrograms to hundreds of milligrams. Each matrix presents a unique set of interferences and sample preparation problems. The unique chemistry of the Acclaim Trinity P1 column provides ideal selectivity and good retention of both anions and cations with excellent efficiency. It also provides the ability to manipulate the selectivity by pH, ionic strength, and organic solvent content in the mobile phase. Here, a short 50 mm column provides high efficiency and resolution for seven of the more commonly analyzed vitamins.