

Application Note

## ACQUITY UPLC Analysis of Water Soluble Vitamins

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Waters Corporation



This is an Application Brief and does not contain a detailed Experimental section.

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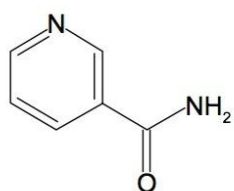
### Abstract

This application brief demonstrates the UPLC Analysis of water soluble vitamins.

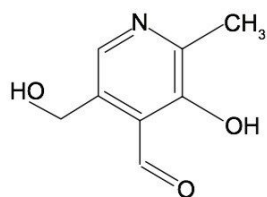
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## Introduction

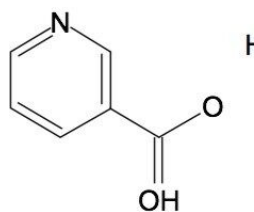
### Structures



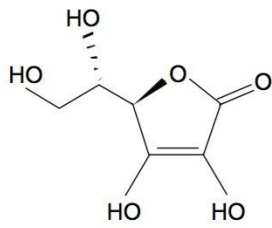
**Nicotinamide**



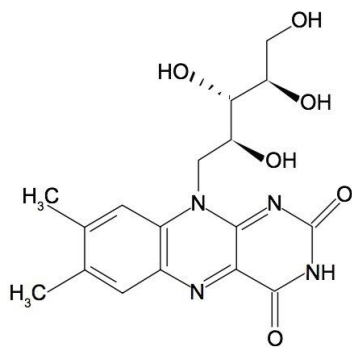
**Pyridoxal**



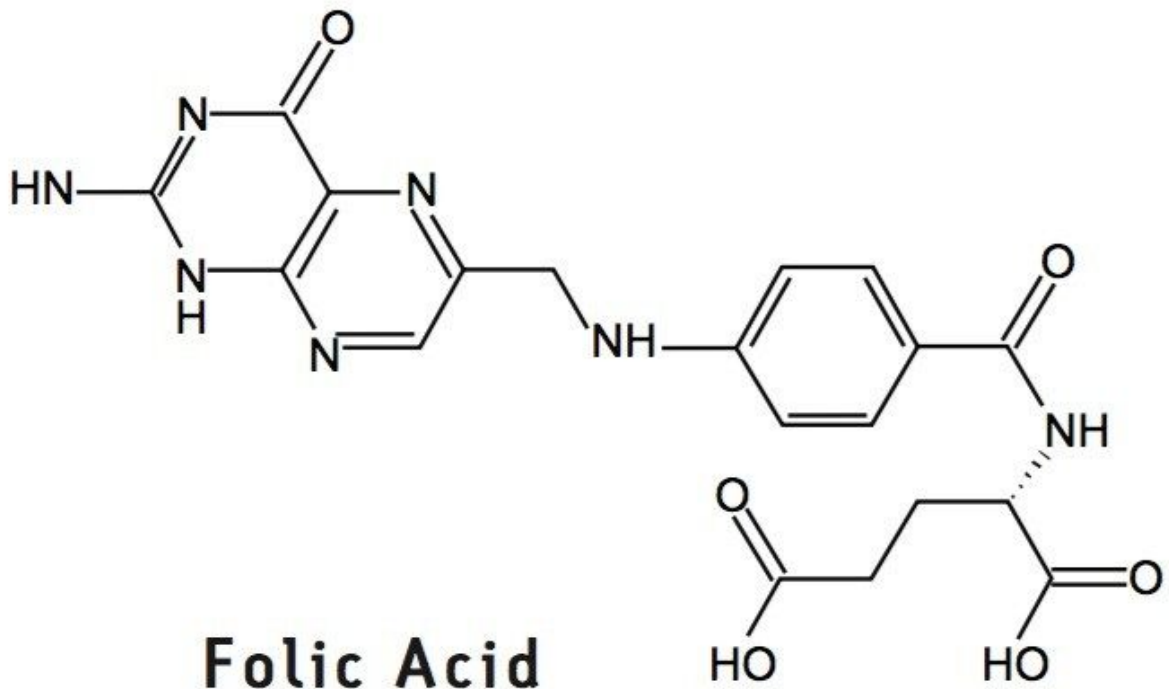
**Nicotinic acid**



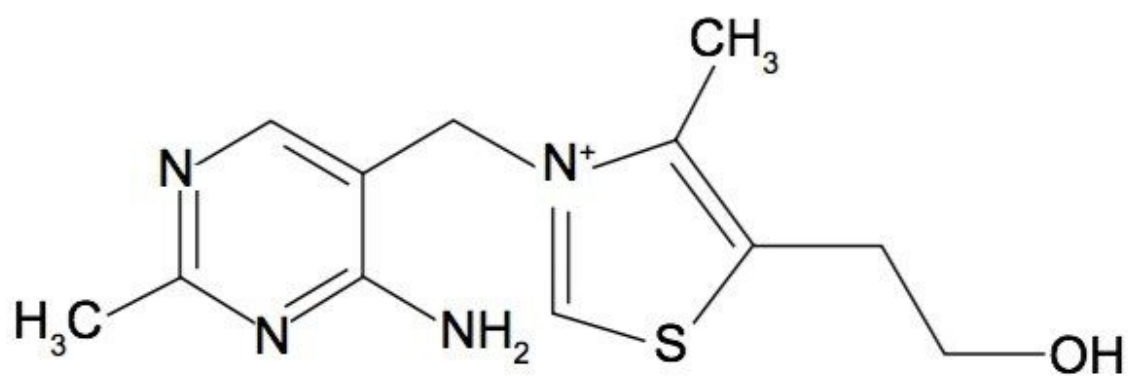
**d Ascorbic acid**



**Riboflavin**



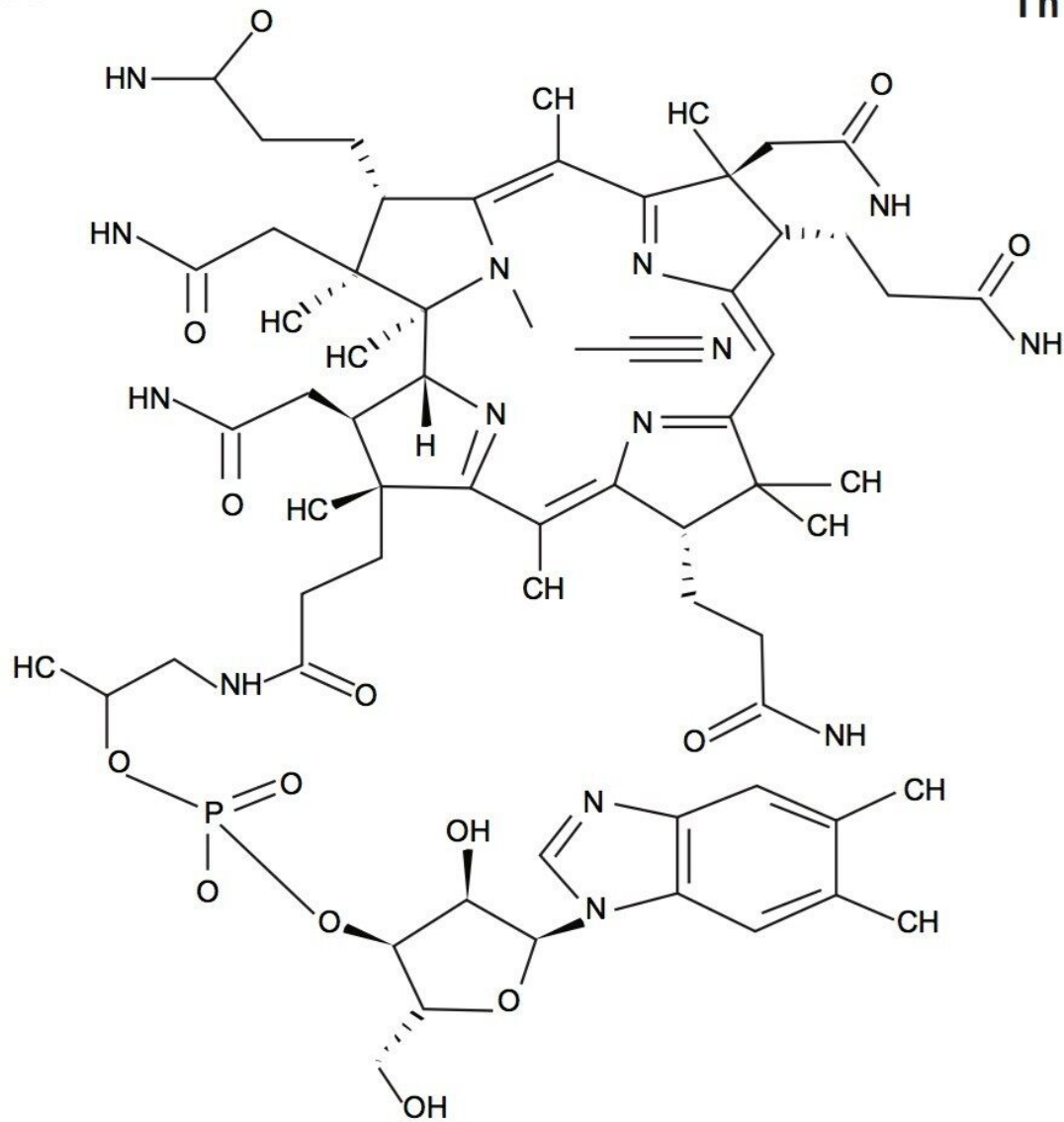
**Folic Acid**



**Thiamine**

COOH

Thiamine



B12

### Compounds

1. Nicotinamide (25 µg/mL)
2. Pyridoxal (50 µg/mL)
3. Riboflavin (50 µg/mL)
4. Nicotinic acid (50 µg/mL)

5. Thiamine (50 µg/mL)
6. Ascorbic acid (25 µg/mL)
7. B12 (50 µg/mL)
8. Folic Acid (25 µg/mL)

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## Experimental

### Test conditions

Column:	ACQUITY UPLC BEH Amide, 2.1 x 50 mm, 1.7 µm
Part Number:	186004800
Mobile Phase A:	50/50 MeCN/H <sub>2</sub> O with 10 mM CH <sub>3</sub> COONH <sub>4</sub> and 0.04 % NH <sub>4</sub> OH, pH 9.0
Mobile Phase B:	90/10 MeCN/H <sub>2</sub> O with 10 mM CH <sub>3</sub> COONH <sub>4</sub> and 0.04 % NH <sub>4</sub> OH, pH 9.0
Flow Rate:	0.5 mL/min
Injection Volume:	5 µL (PLNO)
Sample Diluent:	75/25 MeCN/MeOH with 0.2% HCOOH
Column Temperature:	30 °C
Weak Needle Wash:	95/5 MeCN/H <sub>2</sub> O
Detection:	UV @ 265nm
Sampling Rate:	20 points/sec

Filter Time Constant:

0.2

Instrument:

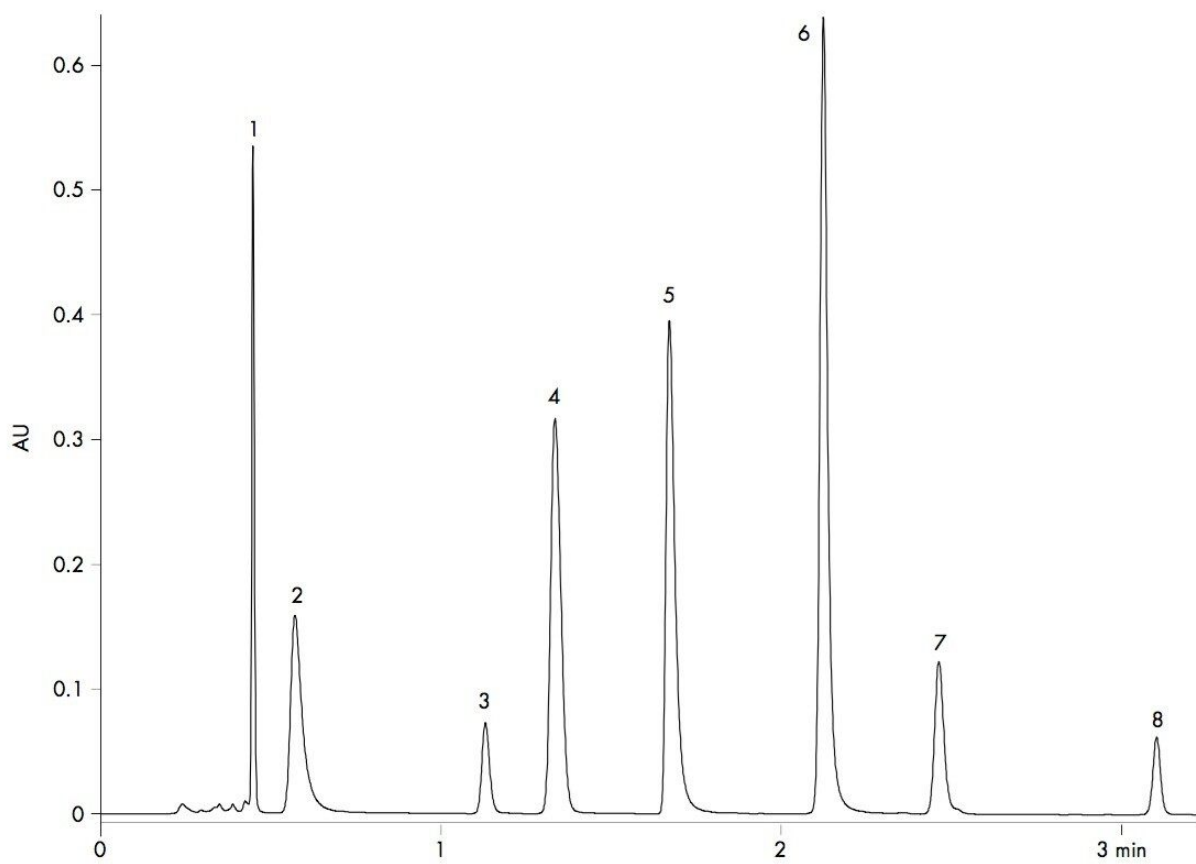
Waters ACQUITY UPLC with ACQUITY UPLC  
PDA Detector

### Gradient:

Time (min)	%A	%B
Initial	0.1	99.9
3.50	70.0	30.0
3.51	0.1	99.9
7.50	0.1	99.9

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## Results and Discussion



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## Featured Products

[ACQUITY UPLC System <https://www.waters.com/514207>](https://www.waters.com/514207)

[ACQUITY UPLC PDA Detector <https://www.waters.com/514225>](https://www.waters.com/514225)

WA60093, June 2009



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