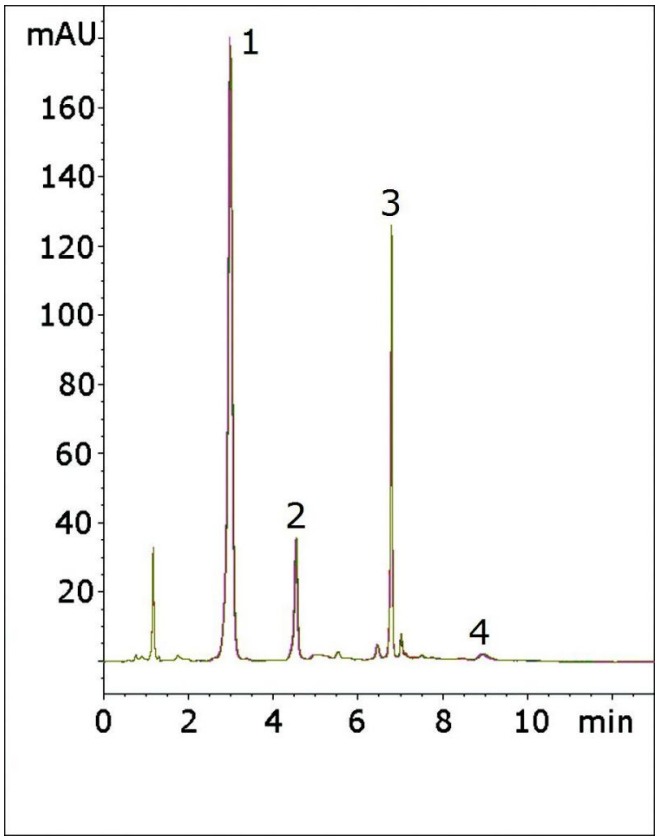
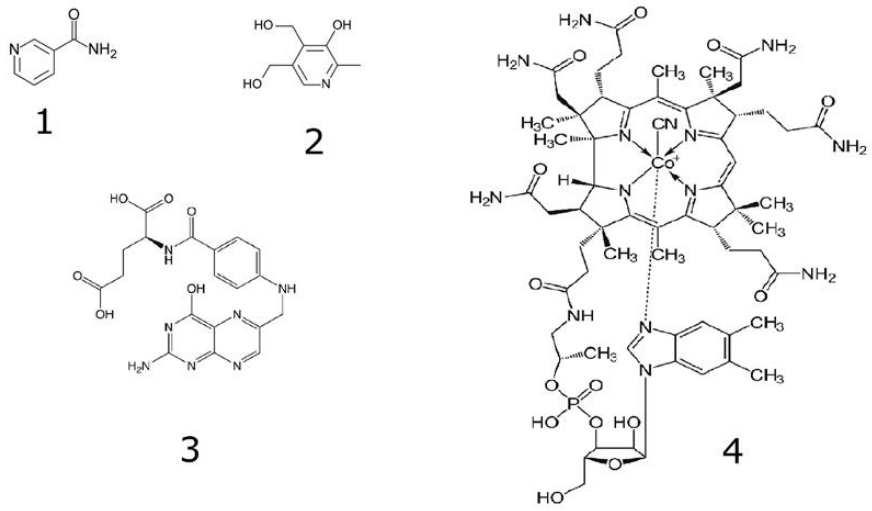
Water Soluble Vitamin Tablet Analysis with HPLC – AppNote

Separation of Water Soluble Vitamins without Ion Pair Agents

This AppNote illustrates the Separation of four Hydrophilic, B Vitamins which were extracted from a commercially available tablet formulation. The data shows that these Water soluble B-Vitamins are well Separated from each other and from any Matrix Peaks. The main advantage of this Method over traditional Reversed Phase analyses for is that Ion Pair Agents are not needed to achieve acceptable results.

This Method can be used for LCMS applications. Furthermore, the Method's Precision is very good, as the overlay of 5 runs in the Figure below shows. Peak identities were confirmed by individual standards.





Peaks:

1. Niacinamide
2. Pyridoxine
3. Folic Acid
4. Cyanocobalamin

Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å

Catalog No.: 70000-7.5P

Dimensions: 4.6 x 75mm

Mobile Phase:

A: DI Water with 10mM Ammonium Formate

B: 95:5 Acetonitrile / Solvent A (v/v)

Gradient:

Time *(minutes)*	%B
0	100
2	100
9	50
10	100

Post time: 3 minutes

Injection vol.: 1µL

Flow rate: 1.0mL / minute

Detection: UV @ 266nm

Sample Preparation: The Vitamin Tablet was ground and dissolved in 25mL of 50:50 10mM Ammonium Formate / Acetonitrile with 0.1% v/v 1N NaOH diluent. Solution was sonicated for 10 minutes and filtered through 0.45µm Nylon Syringe Filter (MicroSolv Tech Corp.).

t_0: 1.0 minute

Note: *The word "vitamin" was originally spelled "vitamine" when it was first coined by biochemist Casimir Funk. It was derived from the words "vital" and "amine" because it was believed at the time that all vitamins were chemical amines. The "e" was dropped from the word when it was discovered that this is not the case.*

Attachment

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