Product No: JSM-CL-2800

JASEM

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Vitamins B1, B2, B6 LC-MS/MS Analysis Kit

Vitamin B1, vitamin B2 and vitamin B6 are water-soluble vitamins which play role in various biological activities. Vitamin B2 is not only a cofactor for reduction-oxidation enzymes in energy metabolism but also acts as a coenzyme for the metabolism of folate, Vitamin B12, Vitamin B6 and homocysteine. Vitamin B1 plays a major role in obtaining energy from carbohydrates and fat. Thiamine pyrophosphate (TPP) which is an active form of vitamin B takes role as coenzyme for some enzymatic reactions in carbohydrate metabolism and pyruvate decarboxylase. In addition, TPP is significantly involved in the oxidative degredation of glucose. Vitamin B6 is taken by food, and underwent with some enzymatic transformation to pyridoxal-5-phosphate which is the active form of it. Pyridoxal-5-phosphate participates in nearly a hundred different enzymatic processes, as a cofactor in amino acid metabolism and in the production of hemoglobine or neurotransmitters in the brain. JASEM LC-MS/MS analysis kit provides simultaneous quantification of B1, B2, B6, pyridoxal-5-phosphate, FAD and TPP in whole blood.

Highlights of the Analysis Kit

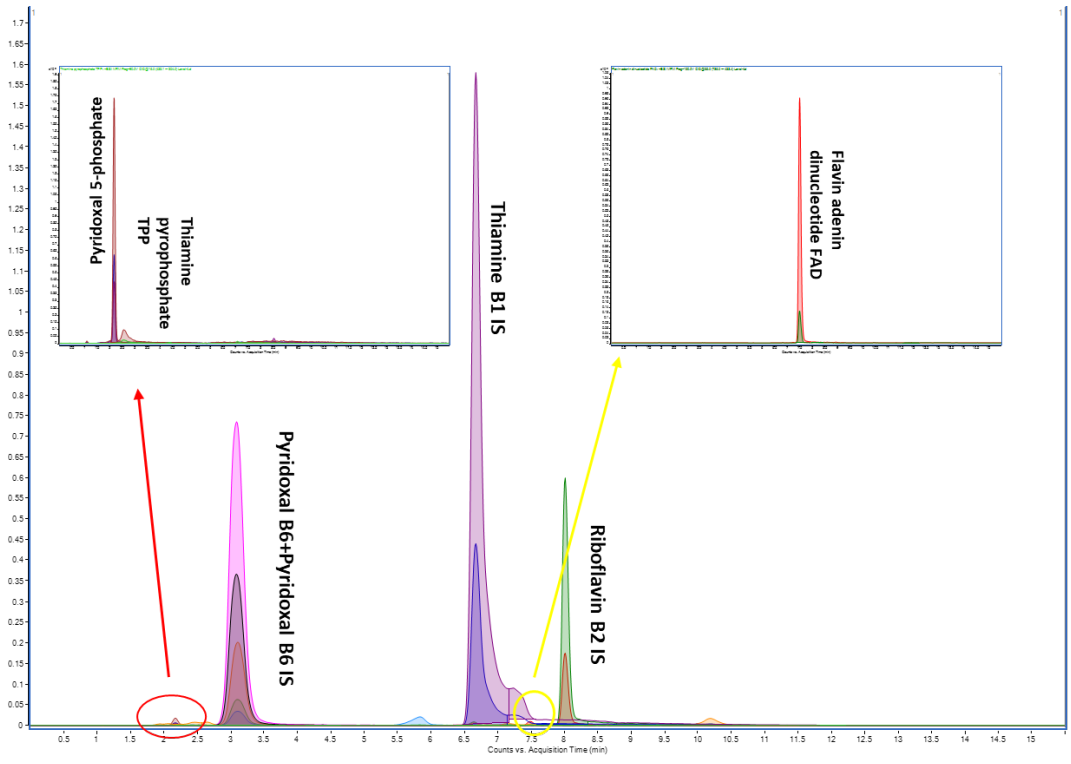
- Simultaneous measurement the concentrations of 4 forms of vitamin B
- Just a few pipetting steps for the sample treatment-protein precipitate and shoot approach-no need for derivatization and SPE
- Total run time 12 min.
- Consuming small volume of patient's sample
- Long life span of HPLC column

Parameters			
Thiaminepyrophosphate (TPP)	Flavineadeninedinucleotide (FAD)	Pyridoxal-5-phosphate (PLP)	Pyridoxal (PL)
Sample Type			
Whole Blood			

Sample Preparation

1	Pipette 100 µL of calibration/control/sample into a glass centrifuge tube
2	Add 25 µL of internal standard working stock solution, then 700 µL Reagent-2 and vortex for 3 sec.
3	Centrifuge at 4000 rpm for 5 min.
4	Decant the supernatant into HPLC vial prior to injection

Example Chromatogram



Total ion chromatogram

Method Performance

All validation results were obtained using Agilent 6470 QQQ system

Analytes	LOQ (µg/mL)	Linearity (µg/mL)	Recovery (%)	Repeatability (%CV)
Pyridoxal 5-phosphate (PLP)	2.81	7.46 – 103.0	105	1.15
Thiamine pyrophosphate (TPP)	7.44	10.7 – 184.0	120	0.51
Pyridoxal (B6)	1.09	1.04 – 42.9	98	0.33
Flavin adenin dinucleotide (FAD)	7.18	51.1 – 634.0	85	0.38

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