

Efficient and Proven Vitamins B₁/B₆ Analysis

Dedicated kits for every laboratory



Internal
standards
for both
parameters

Very good
correlation with
LC-MS/MS

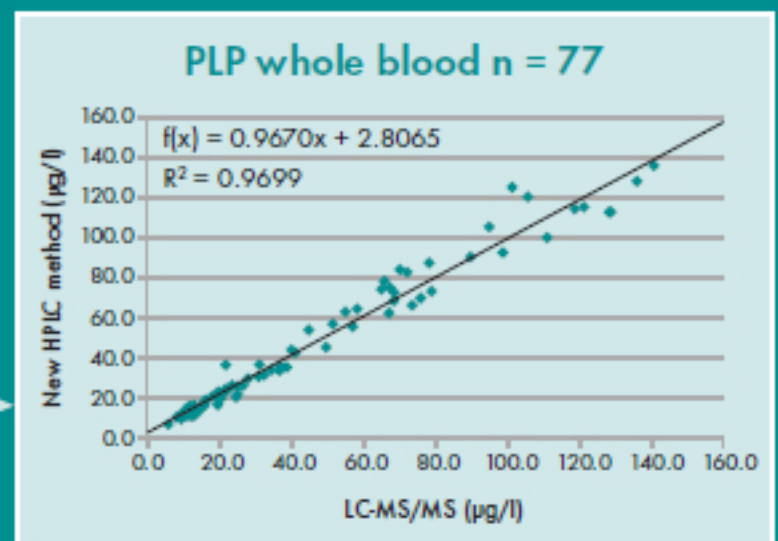
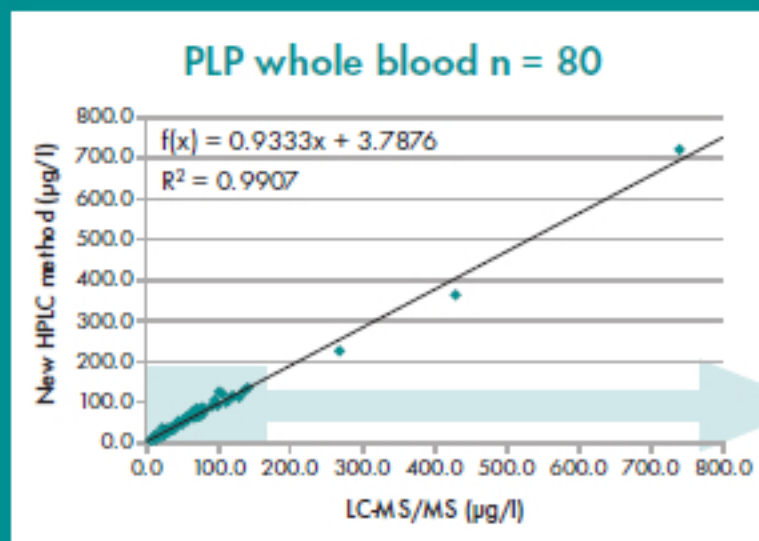
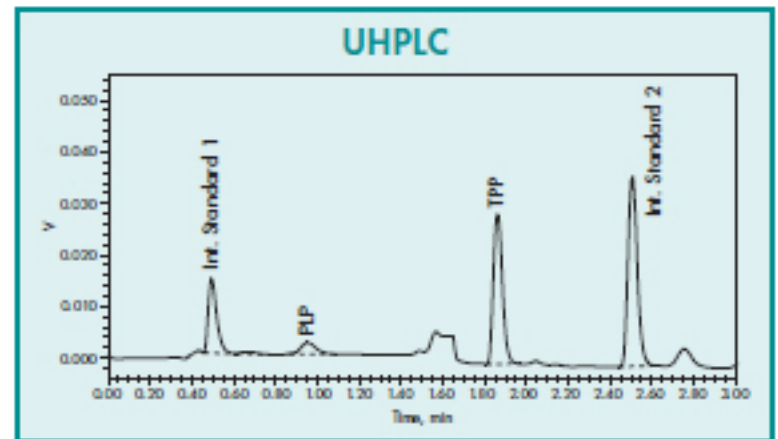
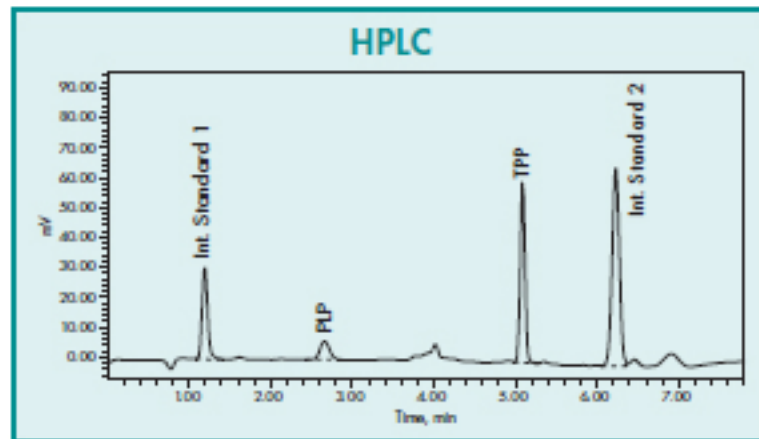
Vitamins B₁ and B₆
by HPLC and UHPLC

Chromsystems Kits for Vitamins B₁ and B₆ Analysis by HPLC and UHPLC

Vitamins B₁ and B₆ are co-enzymes in metabolic processes of the human body. They are important parameters in the diagnosis of potential deficiencies, which occur in elderly people due to malnutrition, in severe alcoholism or gastrointestinal impairments through surgery or disease. The active form of vitamin B₁, thiamine pyrophosphate (TPP), acts as a co-enzyme in carbohydrate and oxidative glucose metabolism. As the active form, TPP concentrations in whole blood are more conclusive than the concentration of total thiamine. Vitamin B₆ is comprised of the pyridoxine-group pyridoxine, pyridoxamine and pyridoxal. It is ingested with food and transferred via several enzymatic conversions into its active form, pyridoxal-5'-phosphate (PLP). PLP is a co-factor, e.g. in amino acid metabolism and in the formation of haemoglobin or neurotransmitters. If PLP cannot be synthesised due to enzyme deficiency, strong convulsions, especially in newborns, are induced.

Chromsystems provides a range of kits for different needs in vitamins B₁ and B₆ analysis, from kits for the analysis of a single parameter through to high throughput automated methods by HPLC and UHPLC.

The updated reagent kits for the combined analysis of vitamin B₁ (TPP) and vitamin B₆ (PLP) allow the precise and reliable determination in whole blood and plasma. Vitamin molecules are derivatised during sample preparation which renders the common post-column derivatisation unnecessary. The separation takes place with two separate mobile phases on one HPLC or UHPLC column with fluorescence detection at two different wavelengths. Each of the parameters is safeguarded by a specific internal standard, ensuring a precise quantification. The accuracy of results for vitamin B₆ has been demonstrated by a high correlation in a comparison study with LC-MS/MS as reference method.



Method comparison of the new Chromsystems method
Results generated with the new HPLC kit show a very good correlation with a LC-MS/MS method for vitamin B₆ (PLP).

Your choice in Vitamins B₁ and B₆ Analysis

Vitamins B₁ and B₆ – Combined Analysis

Kit no.	Method	Specifications (whole blood)	Analysis Time
52052	HPLC	LOQ: TPP 2.0 µg/l PLP 4.5 µg/l Intraassay: CV < 3 % Interassay: CV < 6 % Linearity: TPP 750 µg/l PLP 500 µg/l	< 9 min
52052/ Premix	HPLC	LOQ: TPP 2.0 µg/l PLP 4.5 µg/l Intraassay: CV < 3 % Interassay: CV < 6 % Linearity: TPP 750 µg/l PLP 500 µg/l	< 9 min
52952/ UHPLC	UHPLC	LOQ: TPP 5.0 µg/l PLP 5.0 µg/l Intraassay: CV < 4 % Interassay: CV < 6 % Linearity: TPP 750 µg/l PLP 500 µg/l	< 4 min
52752/F	HPLC	LOQ: TPP 6.7 µg/l PLP 1.9 µg/l Intraassay: CV < 5 % Interassay: CV < 6 % Linearity: TPP 750 µg/l PLP 500 µg/l	< 9 min
52952/ UHPLC/F	UHPLC	LOQ: TPP 3.9 µg/l PLP 2.4 µg/l Intraassay: CV < 5 % Interassay: CV < 6 % Linearity: TPP 750 µg/l PLP 500 µg/l	< 4 min

Automated
sample prep

Automated
sample prep

Vitamins B₁ or B₆ as single parameter method

Kit no.	Method	Specifications (whole blood)	Analysis Time
Vitamin B ₁ 35000	HPLC	LOQ: 15 µg/l Intraassay: CV = 4 % Interassay: CV < 6 % Linearity: 200 µg/l	< 6 min
Vitamin B ₆ 31000	HPLC	LOQ: 1 µg/l Intraassay: CV < 7 % Interassay: CV < 4 % Linearity: 250 µg/l	< 8 min

Chromsystems Controls and Calibrators for Vitamins B₁ and B₆ in Whole Blood

Order no.	Product
52003	Whole Blood Calibration Standard, 5 x 1 ml
0164	Whole Blood Control Bi-Level (I + II), 2 x 5 x 2 ml
0165	Whole Blood Control Level I, 5 x 2 ml
0166	Whole Blood Control Level II, 5 x 2 ml

Chromsystems Controls and Calibrators for Vitamins B₁ and B₆ in Plasma

Order no.	Product
36005	Plasma Calibration Standard, 5 x 1 ml
0031	Plasma Control Bi-Level (I + II), 2 x 5 x 2 ml
0032	Plasma Control Level I, 5 x 2 ml
0033	Plasma Control Level II, 5 x 2 ml

- > Each of the parameters safeguarded by a specific internal standard
- > Demonstrated precision: very good correlation with LC-MS/MS
- > Complete kits as well as calibrators and controls
- > High throughput UHPLC methods as well as fully automated workflows available

For detailed order information of the kits and components, please contact your local sales representative or get in touch with us at mailbox@chromsystems.com



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Management system
certified according to DIN EN ISO 9001,
DIN EN ISO 13485, ISO 13485 QM DR