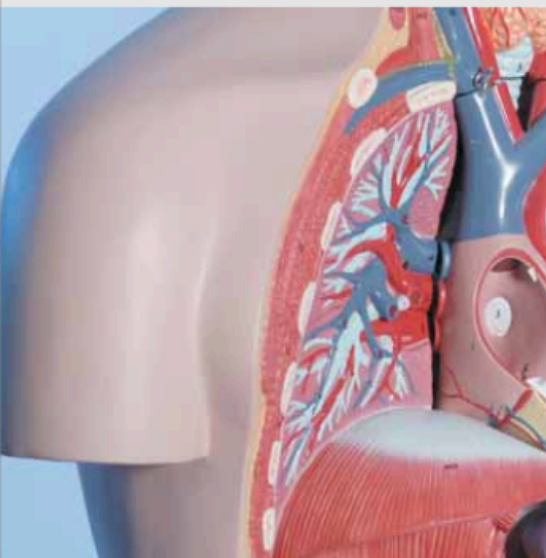


Methylmalonic acid (MMA) serves for the assessment of the vitamin B12 status. Vitamin B12 deficiency leads to an increased MMA concentration in serum, plasma and urine. This new RECIPE ClinMass® Complete Kit provides a fast and time saving MMA analysis featuring short sample preparation with only one pipetting step (serum, plasma) or direct injection of samples after dilution and addition of IS (urine). The subsequent LC-MS/MS analysis is performed within a 2 min injection interval only while the isobar component succinic acid, which may interfere with MMA, is separated reliably. Calibration and quality control is performed in a convenient and cost-efficient way. The method is fully validated using only one (serum) calibration and control set for all three sample matrices (ClinCal® 4-Level Calibrator Set and ClinChek® Controls).



→ One-step sample preparation (serum / plasma)

→ Reliable separation of succinic acid

→ Injection interval: 2 min

## Vitamin Status

# Methylmalonic Acid in Serum / Plasma / Urine, advanced

### Test Data

#### Linearity:

- Serum, Plasma: 25 - 67745 nmol/l
- Urine: 651 - 1426200 nmol/l

#### LOD:

- Serum, Plasma: 15 nmol/l
- Urine: 391 nmol/l

#### LLOQ:

- Serum, Plasma: 25 nmol/l
- Urine: 651 nmol/l

Intraassay precision: 4.3 %

Interassay precision: 5.1 %

### LC-MS/MS Parameters

#### LC-Parameters

Binary gradient pump: Mobile Phase A / B  
(0.7 ml/min)

Injection volume: 2 - 5 µl

Injection interval: 2.0 min

Column heater: 25 °C

#### MS-Parameters

Ion source: Turbo-ion spray (TIS) ESI,  
negative

MS/MS-Mode: MRM

### Sample Preparation

#### Precipitation / Addition of IS:

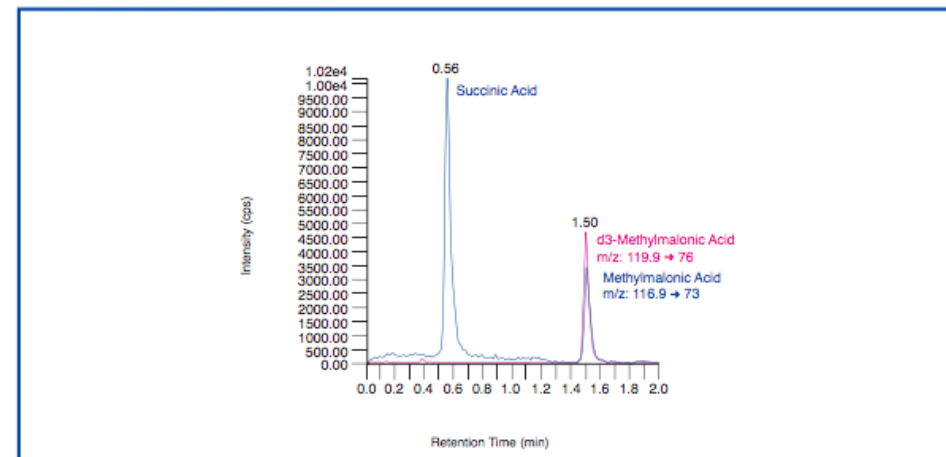
400 µl P Precipitant (contains internal standard)	100 µl sample* (calibrator, control, patient)
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LC-MS/MS Analysis: ↓ mix and centrifuge

Inject 2 - 5 µl of the sample
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\* Urines are diluted (50 µl urine + 1000 µl Diluting Solution D)

Chromatogram of the ClinChek® Serum Control, Level I (order no. MS5080)



### Ordering Information

Order No.	Description	Quantity
MS5100	ClinMass® Complete Kit, advanced, for Methylmalonic Acid in Serum / Plasma / Urine for 300 assays	1 pce.
<b>Kit Components (order no. MS5100):</b>		
MS5005	Autosampler Washing Solution	1000 ml
MS5108	Mobile Phase A	1000 ml
MS5109	Mobile Phase B	200 ml
MS5112	Precipitant P with Internal Standard	3 x MS5112 (3 x 40 ml)
MS5013	Serum Calibrator Set, lyophil., (Level 0 - 3)	4 x 1 x 2 ml
MS5020	Sample Preparation Vials	3 x MS5020 (3 x 100 pcs.)
	Manual	1 pce.
<b>Additional Components:</b>		
MS5114	Optimisation Mix	2 ml
MS5021	Diluting Solution D for Urine	50 ml
<b>Start Accessories:</b>		
MS5130	Analytical Column with test chromatogram	1 pce.
<b>ClinChek® Controls:</b>		
MS5080	Serum Control, lyophil., Level I	10 x 2 ml
MS5081	Serum Control, lyophil., Level II	10 x 2 ml
MS5082	Serum Control, lyophil., Level I, II	2 x 5 x 2 ml