

אגף המעבדות  
מעבדה מטבולית  
טלפון: 03-5302553  
פקס: 035302552

[ClinicalBiochemistryLab@sheba.gov.il](mailto:ClinicalBiochemistryLab@sheba.gov.il)

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## Oxalate determination random urine sample, quantitative LC MSMS

### Useful For

1. Follow-up testing for treatment for kidney stones
2. Preferred test for diagnosis of primary or secondary hyperoxaluria

### Methodology

Liquid chromatography tandem mass spectrometry with Electrospray ionization (ESI) technique.

### Clinical Information

Measurement of oxalate in urine is important for the diagnosis of primary hyperoxaluria. Oxalate is an end product of glyoxalate and glycerate metabolism. Humans do not have an enzyme capable of degrading oxalate, therefore it must be eliminated by the kidney. Increased urinary oxalate excretion results from inherited enzyme deficiencies (primary hyperoxaluria). In type I, a defect in glyoxalate metabolism is found, leading to increased oxalate synthesis. Excessive quantities of glyoxylic and glycolic acid urinary excretion occur. Type II is rare; it is characterized by excessive urinary excretion of oxalic and L-glyceric acids with normal excretion of glycolic acid.

### Necessary Information

Test order form

Clinical background of patient

Payment document

The sample should be delivered cold or preferably frozen to the Mega-Lab, laboratory wing, ground floor on week days between the hours 08:00-15:00. Random oxalate excretion normalized to urinary creatinine and might be advantageous for patients who cannot collect a 24-hour specimen, like small children. For that reason, this random test is offered for children under 17 years old. However, 24-hour urine collection is the preferred specimen to random specimens when measuring oxalic acid for diagnostic evaluation and monitoring of hyperoxaluria.

**Instruct patient:** The patient's first morning urine is not to be collected. Then collect a random second morning urine a collection container containing without any preservative.

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### **Patient Preparation**

Avoid high dosages of vitamin C supplements (more than 2g/orally/24 hr) and vitamin C-rich foods (like, citrus fruits, oranges, orange juice; vegetables like broccoli, tomatoes, peppers, potatoes) for 48 hours prior to collection.

**Specimen Volume** 3 ml

### **Specimen Stability Information**

Frozen (preferred) 30 days at -20 °C  
Refrigerated 1 day

### **Interpretation**

An elevated urine oxalate excretion may suggest primary hyperoxaluria (alanine glyoxalate transferase enzyme deficiency, glyceric dehydrogenase deficiency), idiopathic hyperoxaluria, or excess dietary oxalate or vitamin C intake. Results of this test should be interpreted in the context of relevant clinical and family history and physical examination findings.

### **Clinical Reference**

Oxalate mg/mg Creatinine  
0-6M <0.175  
6-12M <0.139  
1-2Y <0.103  
2-3Y <0.08  
3-5Y <0.064  
5-7Y <0.056  
7-17Y <0.048

**Turnaround time** 30 working days

**Ministry of Health code** 83945

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