

Comenius University in Bratislava, Faculty of Medicine
Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry

LABORATORY PROTOCOL SS - 2nd seminar

Determination of uric acid concentration in serum and urine

Name, study group:	Date:
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Principle:

Tungsten from reagent is reduced by uric acid in the presence of sodium glycinate. During the reduction blue coloured complex is formed.

Procedure:

	S ₁	S ₂	U ₁	U ₂	standard	ref. sample
serum 1 (1:10)	2.0 mL	---	---	---	---	---
serum 2 (1:10)	---	2.0 mL	---	---	---	---
urine 1 (1:100)	---	---	2.0 mL	---	---	---
urine 2 (1:100)	---	---	---	2.0 mL	---	---
standard (15 µmol/L)	---	---	---	---	2.0 mL	---
water	---	---	---	---	---	2.0 mL
glycinate buffer	0.4 mL	0.4 mL	0.4 mL	0.4 mL	0.4 mL	0.4 mL
phosphotungstate reagent	0.1 mL	0.1 mL	0.1 mL	0.1 mL	0.1 mL	0.1 mL

Let the samples stand for 10 minutes and measure the absorbance at 710 nm.

Calculation:

Diuresis: patient 1: 0.9 L/24 h
 patient 2: 1.2 L/24 h

	Patient 1		Patient 2		standard
	S ₁	U ₁	S ₂	U ₂	
absorbance					
concentration (µmol/L)					15
correction for dilution					---
excretion (mmol/24 h)	---		---		---

Reference values:

	men	women
uric acid in serum	200 – 420 $\mu\text{mol/L}$	140 – 340 $\mu\text{mol/L}$
uric acid in urine	1.5 – 4.5 mmol/24 h	

Conclusion:

Next week:

Regulation of gene expression. Basis of molecular biology – replication, transcription, translation.

Literature for next week:

Lippincott's:

- Chapter 29 or 30: DNA structure, replication, and repair (Characteristics of basic processes)
- Chapter 32 or 33, Part III (A-D): Regulation of prokaryotic gene expression