

BIOCHEMISTRY II
GENERAL MEDICINE
VSBC041c

PRACTICE

Date	Experiments
1. week 18. 2. – 22. 2.	Directions for laboratory work. Handling biological material. 1.1 Blood collection. 1.2 Blood processing. 1.3 Manual methods, pipetting. 1.4 Biochemical analyzers 1.5 Factors influencing results of laboratory examinations. 1.5 Interpretation of results 1.6. Test requisition forms
2. week 25. 2. – 1. 3.	<u>Investigation of lipid and cholesterol metabolism</u> 2.1 Determination of total cholesterol in serum and blood. 2.2 Determination of blood triacylglycerols using Reflotron. 2.3 Determination of HDL-cholesterol and LDL-cholesterol. 2.4 Calculation of LDL-cholesterol 2.5 Electrophoresis of serum lipoproteins.
3. week 4. 3. – 8. 3.	<u>Investigations of glucose metabolism. Diabetes mellitus</u> 3.1 Enzymatic determination of serum glucose. 3.2 Determination of glycaemia by personal glucometer. 3.3 Oral glucose tolerance test (oGTT). 3.4 Detection and determination of glucose in urine. 3.5 Detection of ketone bodies in urine. 3.6 Determination of glycated hemoglobin (HbA1). 3.7 Late complications of diabetes – microalbuminuria.
4. week 11. 3. – 15. 3.	<u>Investigations in liver disease I– Enzymes</u> 4.1 Determination of ALT catalytic concentration in serum. 4.2 Determination of AST catalytic concentration in serum. 4.3 Determination of ALP catalytic concentration in serum.
5. week 18. 3. – 22. 3.	<u>Selected investigations in liver disease II – bile pigments and albumin</u> 5.1 Determination of total bilirubin in serum. 5.2 Detection of bilirubin in urine. 5.3 Detection of urobilinogens in urine. 5.4 Determination of serum albumin.
6. week 25. 3. – 29. 3.	<u>Laboratory diagnostics of myocardial infarction</u> 6.1 Determination of creatine kinase catalytic concentration. 6.2 Determination of serum CK-MB catalytic concentration. 6.3 Determination of troponin T in blood. 6.4 Determination of blood myoglobin.
7. week 2. 4. – 5. 4.	<u>Investigation of plasma proteins</u> 7.1 Determination of total protein by the biuret test. 7.2 Determination of blood albumin in serum. 7.3 Electrophoresis of serum proteins. 7.4 Assay for increased level of C-reactive protein. 7.5 Determination of serum IgE by ELISA method.

8. week 8. 4. – 12. 4.	<u>Biochemical tests of renal function – I</u> 8.1 Investigation of urine by inspection and physical methods. 8.2 Determination of creatinine in serum and urine. 8.3 Measurement of glomerular filtration rate with creatinine. 8.4 Fractional reabsorption and excretion of water.
9. week 15. 4. – 19. 4.	<u>Biochemical tests of renal function – II</u> 9.1 Detection of proteinuria. 9.2 Urine test for haemoglobin (haemoglobinuria and haematuria). 9.3 Determination of protein concentration in urine. 9.4 Detection of microalbuminuria. 9.5 Determination of urea in serum and urine. 9.6 Approximate assessment of the nitrogen balance.
10. week 22. 4. – 26. 4.	<u>Routine urinalysis. Test strips</u> 10.1 Multipurpose diagnostic strips in urinalysis. 10.2 Detection of addictive drugs in urine. 10.3 Detection of barbiturates in urine. 10.4 Detection of luteinizing hormone in urine
11. week 29. 4. – 3. 5.	<u>Examinations in urolithiasis</u> 11.1 Solubility of uric acid. 11.2 Detection of uric acid by murexide reaction. 11.3 Simplified chemical analysis of renal calculi. 11.4 Determination of uric acid in serum and urine.
12. week 6. 5. – 10. 5.	<u>Some investigations of the gastrointestinal tract</u> 12.1 Selected examinations of stomach functions. 12.2 Laboratory tests in pancreas diseases. 12.3 Breath tests in gastroenterology. 12.4 Test of occult bleeding in gastrointestinal test.
13. week 13. 5. – 17. 5.	Compensatory lessons
14.-15. week 20. 5. – 31. 5.	Credits.

Neglected lessons have to be made up by the 14th of June 2013.

Recommended textbook: Tomandl: Biochemistry II- Practicals. Brno 2008

Conditions for giving the course-unit credit

- Full (100%) attendance in labs is the principal condition.
If any absence, it must be apologized through Department of Study Affairs **up to five days**.
If apology is recorded in Information System (IS), then student is allowed to make up the absence according to teacher's instructions.
- Presentation of all lab reports to the teacher

Deadline for any issue (making up all missing and justified lessons, completion of all lab reports and handing them to the teacher) **is 14. 6. 2013.**

Students that will not meet this requirement will not be given the course-unit credit.

Obtaining of course-unit credits of practices is the pre-requisite for registration to the examination of Biochemistry II.