

Dear international students!

From 25th April to 1st May, you will have class № 30 “**METABOLISM OF AMINO ACIDS – II**”. In order for the class to be counted, you are supposed to write **at least 6-pages outline of the class**, containing answers to the questions listed in the training guidelines.

The notes will be revised by your teacher by the end of the distance learning period.

C L A S S № 30. THEORETICAL PART

1. Decarboxylation of amino acids. Types of decarboxylation, biological role. Biogenic amines: synthesis, their functions. Oxidation of biogenic amines.
2. Ways for the formation and detoxification of ammonia.
3. Intracellular detoxification of ammonia: reductive amination, synthesis of glutamine and asparagine. Role of glutaminase in the maintenance of acid-base balance in the body.
4. Biosynthesis of urea. Disorders of the urea synthesis and excretion.
5. Catabolism of amino acids in the organism. Glucogenic and ketogenic amino acids.
6. Metabolism of methionine: formation of S-adenosylmethionine, its role in transmethylation reactions. Synthesis of creatine. Lipotropic effect of methionine.
7. Metabolism of phenylalanine and tyrosine. Disorders of phenylalanine and tyrosine metabolism (phenylketonuria, alkaptonuria, albinism).

LITERATURE FOR TRAINING:

1. Harper's Illustrated Biochemistry / Robert K. Murray [et. al.]. – 28th ed. – New York [etc]: McGraw-Hill, Medical, 2009. – P. 146, 243-247, 248,254, 257-258, 268-269, 435-436.
2. Harper's Illustrated Biochemistry / Robert K. Murray [et. al.]. – 29th ed. – New York [etc]: McGraw-Hill, Medical, 2012. – P. 271-290, 303, 304.
3. Harper's Illustrated Biochemistry / Robert K. Murray [et. al.]. – 31st ed. – New York [etc]: McGraw-Hill, Medical, 2018. – P. 272-278, 280-303.
4. Biochemistry: manual for the medical faculty for international students (in English) / Н.Э. Петушок, А.А. Масловская, М.Н. Курбат. – Гродно: ГрГМУ, 2014. . P. 200-218.
5. Harper's Illustrated Biochemistry / Robert K. Murray [et. al.]. – 30th ed. – New York [etc]: McGraw-Hill, Medical, 2015. – P. 290-296., 304-306, 308-309.
6. Lectures “Amino Acids-2” and “Amino Acids3”.

Lectures on amino acids are available on the site on our department.

In the laboratory work “**DETERMINATION OF UREA IN THE BLOOD SERUM**” you should write down values of extinctions, perform calculation, and make conclusion:

Date: _____

RESULT:

$$E_{\text{test}} = 0,057 ;$$

$$E_{\text{stand}} = 0,18 ;$$

CALCULATION:

$$C_{\text{test}} = \frac{E_{\text{test}}}{E_{\text{stand}}} \cdot 16,65 = \quad \text{mmol/L.}$$

CONCLUSION:

If you have questions on training you can contact your teachers through the e-mail addresses available on the department website (Russian and English version).

Please, report whether you have received this letter.