


<p>             ОҢТҮСТІК ҚАЗАҚСТАН  <b>MEDISINA</b>  <b>AKADEMIASY</b>              «Оңтүстік Қазақстан медицина академиясы» АҚ           </p>		<p>               SOUTH KAZAKHSTAN  <b>MEDICAL</b>  <b>ACADEMY</b>              АО «Южно-Казахстанская медицинская академия»           </p>
<p>Department of «Topographic anatomy and histology»</p>		52-11
<p>Methodological guidelines for independent work of students "Normal blood and lymph"</p>		Page 1 of 13

## METHODOLOGICAL GUIDELINES FOR INDEPENDENT WORK OF STUDENTS

Discipline: "Normal blood and lymph"

Discipline code: NBL 2210


Name and code of the EP: 6B10115 "Medicine"

Amount of study hours (credits): 15/0.5

Course and semester of study: 2/3


The amount of independent work: 1/9 hours.


Shymkent, 2024

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Methodological guidelines for independent work of students were developed in accordance with the working curriculum of the discipline (syllabus) "Normal blood and lymph" and discussed at a meeting of the department of «Topographic anatomy and histology»

Protocol No. 1 from "03" 09 2024

Head of the department, c.m.s., acting professor  Murzanova D.A.

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## Lesson No. 1

### 1. Topic: Hemogram. The leukocyte formula.

#### 2. Purpose: to learn:

- To give a morphofunctional characterization of blood as tissue.
- \* Distinguish between erythrocytes, neutrophils, eosinophils, basophilic granulocytes, lymphocytes and monocytes in the preparation of a blood smear stained with azur II and eosin. Calculate the percentage of leukocytes in a blood smear (leukocyte formula).

#### 3. Tasks

1. Histogenesis and morphofunctional features of tissues of the internal environment.
  2. Characteristics of blood as tissue.
  3. Morphology and function of shaped blood elements.
  4. An idea of the hemogram and leukocyte formula, their age and sexual characteristics.
  5. The composition of the lymph.
  6. Micro-preparations for the study of sketching.
- A smear of human blood. Romanovskycoloring.

#### 4. Form of execution/evaluation: checklist for SIW assessment

#### 5. Performance criteria: work in small groups, protection of the presentation of micro-products, microphotographs, compilation of a glossary.

Form of control	Evaluation	Evaluation criteria
Completing test tasks	Great Corresponds to the points: 95-100; 90-94	90-100% correct answers
	Well Corresponds to the points: 85-89; 80-84; 75-79, 70-74	70-89% correct answers
	Satisfactorily Corresponds to the scores: 65-69; 60-64; 50-54	50-69% correct answers
	Unsatisfactorily Corresponds to the scores 0-49	Less than 50% correct answers

#### Preparation of the presentation

Form of control	Evaluation	Evaluation criteria
Preparation and protection of the presentation	Great Corresponds to the points: 95-100; 90-94	The presentation was made independently, at the appointed time, with a volume of at least 15-20 slides. At least 5 literary sources have been used. The slides are informative and concise. During the defense, the author demonstrates in-depth knowledge of the topic. Does not make mistakes when answering questions during the discussion.

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	Unsatisfactory Corresponds to the points 0-49	The presentation was not delivered on time, the volume is less than 15-20 slides. Less than 5 literary sources have been used. The slides are not meaningful. During the defense, the author makes gross mistakes when answering questions. He does not know his own material.

#### Compiling a glossary

Form of control	Evaluation	Evaluation criteria
Compiling a glossary	Perfectly matches the scores: 95-100; 90-94	The student compiled a glossary on the topic at the appointed time, independently, accurately, without errors, with a volume of at least 20 words, correctly formulated the concepts.
	Matches the scores well: 85-89; 80-84; 75-79, 70-74;	The student compiled a glossary on the topic at the appointed time, independently, carefully, with a volume of at least 20 words, correctly formulated the concepts, made unprincipled mistakes when compiling the glossary.
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	Unsatisfactorily corresponds to the scores 0-49	The student did not compile a glossary on the topic at the appointed time, or left it at the appointed time, but not thoroughly, carelessly, with a volume of less than 20 words on the topic, made gross mistakes

		when compiling the glossary.
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### Solving situational task

Form of control	Evaluation	Evaluation criteria
Solving situational problems	Perfectly matches the estimates: 95-100; 90-94	He actively participated in the work, showed original thinking, showed deep knowledge of the material, and used scientific achievements of other disciplines in the discussion.
	Matches the estimates well: 85-89; 80-84; 75-79, 70-74	He actively participated in the work, showed knowledge of the material, admitted unprincipled inaccuracies or errors corrected by the student himself.
	Satisfactorily corresponds to the estimates: 65-69; 60-64; 50-54	When working in the group, he was passive, made inaccuracies and fundamental mistakes, and had great difficulties in systematizing the material.
	Unsatisfactorily corresponds to the assessment: 0-49	He did not participate in the group's work, answering the teacher's questions, made fundamental mistakes and inaccuracies, and did not use scientific terminology in his answers.

**6. Delivery time:** according to the schedule of the schedule

### 7. Literature:


#### Main literature

1. Inderbir Singh. Textbook of Human Histology. With Color Atlas and Practical Guide/8th Edition. Jaypee Brothers Medical Publishers. 2016. - 302 p. Перевод Гистология человека
2. Dudek Ronald W. Embryology / Ronald W. Dudek. - 5th ed. - [s. l.] : Wolters Kluwer, 2014. - 158 p. Перевод заглавия: Эмбриология
3. Gartner Leslie P. Cell Biology and Histology / Leslie P. Gartner. - 8th ed. - [s. l.] : Wolters Kluwer, 2019. - 436 p. - (BRS. Board Review Series) Перевод заглавия: Клеточная биология и гистология

#### Additional literature

Textbook of Human Histology. Inderbir Singh / Sixth Edition / Inderbir Singh 2010. - 386 p.  
Перевод Учебник по гистологии человека

#### Electronic publications

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1. ATLAS OF HISTOLOGY with Functional Correlations. Thirteenth Edition, Wolters Kluwer.2017.- 1102 p.
2. Theory and practice of Histological techniques.Eighth edition.Elsevier Limited.2019.-554 p.
3. Textbook of HumanHistology.With Color Atlas and Practical Guide/8 thEdition.Jaypee Brothers Medical Publishers .2011.-386 p.
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6. Бородулина, О.В. Цитология и гистология – Cytology and histology : Практикум. / Костанайский гос. педагогический университет им. У. Султангазина. - Костанай: КГПУ им.У.Султангазина, 2020. - 100 с. - <http://rmebrk.kz/>

## 8. Control: Questions

1. What is a hemogram and what is it in a healthy person?
2. What is the leukocyte formula of a healthy person?
3. What are the morphological and chemical characteristics of granulocytes and their functional significance?
4. What is meant by agranulocytes, their morphological and functional characteristics?
5. What are the morphological and chemical characteristics of erythrocytes and blood platelets (platelets)?

## Lesson No. 2

### 1.Topic: Postembryonic hematopoiesis

### 2. Purpose: to learn:

- \* To give a morphofunctional characterization of postembryonic hematopoiesis

### 3. Tasks

The importance of hematopoietic stem cells is really great, thanks to them there is a constant renewal of blood cells. Further study of the cellular and molecular mechanisms of CCM formation in individual development is of undoubted importance not only for understanding the fundamental aspects of the functioning of the hematopoietic system, but also for improving the treatment of hematological diseases.

### 4.Form of execution/evaluation: checklist for SIW assessment

### 5. Performance criteria: work in small groups, protection of the presentation of micro-products, microphotographs, compilation of a glossary.

Form of control	Evaluation	Evaluation criteria
Completing test tasks	Great Corresponds to the points: 95-100; 90-94	90-100% correct answers

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#### Preparation of the presentation

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#### Compiling a glossary


Form of control	Evaluation	Evaluation criteria
Compiling a glossary	Perfectly matches the scores: 95-100; 90-94	The student compiled a glossary on the topic at the appointed time, independently, accurately, without errors, with a volume of

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#### Solving situational task

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		not use scientific terminology in his answers.
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**6. Delivery time:** according to the schedule of the schedule

## **7. Literature:**

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## **8. Control:**

### **Questions**


1. The concept of blood stem cells (CCM) and colony-forming units (CFU).
2. Postembryonic hematopoiesis
3. Regulation of hematopoiesis.

## **Lesson No. 3**

### **1. Topic: Cellular foundations of immunity.**

#### **2. Purpose:** to learn:

- To give a morphofunctional characterization of intracellular antigens,
- Extracellular antigens
- Dendritic cells
- Follicular dendritic cells

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### 3.Tasks;

Formation of effector cells and memory cells;

Effector, caused by the action of effector cells or mediators synthesized by them.

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6. Бородулина, О.В. Цитология и гистология – Cytology and histology : Практикум. / Костанайский гос. педагогический университет им. У. Султангазина. - Костанай: КГПУ им. У. Султангазина, 2020. - 100 с. - <http://rmebrk.kz/>

#### **8. Control: Questions**

1. Granulocytes

2. Fat cells
3. Natural killer cells
4. Antigen-presenting cells