

ODESSA NATIONAL MEDICAL UNIVERSITY
Department of General and Clinical Pharmacology and Pharmacognosy

GUIDELINES
on independent work of students / VTS / № 1

on the topic " The general part of pharmacognosy. Methods of pharmacognosy. Expeditionary works to identify natural plant resources. Raw material base of LR, prospects of development of raw material base. Classification systems of LR and LRS: chemical, morphological, botanical, pharmacological. The main directions of scientific research of LR. The contribution of domestic scientific schools in the study of LR."

Course: 3rd Faculty: medico-pharmaceutical

Approved
on methodical
meeting of the department
August 30, 2024
Protocol № 1



Head departments _____
prof. Rozhkovsky Ya.V.

Topic: "The general part of pharmacognosy. Methods of pharmacognosy. Expeditionary works to identify natural plant resources. Raw material base of LR, prospects of development of raw material base. Classification systems of LR and LRS: chemical, morphological, botanical, pharmacological. The main directions of scientific research of LR. The contribution of domestic scientific schools in the study of LR "- 4 hours.

1. Relevance of the topic One of the main tasks of practical pharmacognosy is to determine the identity (identity) of medicinal plant raw materials. Both macroscopic and microscopic methods of analysis play an important role in performing this task. Histological reactions to various classes of natural compounds contained in plant tissues also help to establish authenticity to a great extent. Analysis of the quality of medicinal plant raw materials is impossible without establishing the content of active substances. For this purpose various biochemical methods, modern equipment, standard and modified methods are used.

Knowledge and skills in determining the identity and quality of medicinal plant raw materials are necessary for the pharmacist in his practical activities in the process of procurement of raw materials, its acceptance from the public or laboratory analysis.

2. Learning objectives:

As a result of independent elaboration of this theme students should:

- *know:*

- Expeditionary work to identify natural plant resources.
- Raw material base of LR, prospects of development of raw material base.
- Classification systems of LR and LRS: chemical, morphological, botanical, pharmacological.
- The main directions of scientific research of LR.
- The contribution of domestic scientific schools in the study of LR.

- be able to:

- explain the essence of pharmacognostic analysis of LRS
- to substantiate the contribution of domestic scientific schools in the study of LR
- name the classification systems of LR and LRS.

3. Materials for pre-classroom training of students.

3.1. Basic basic knowledge, skills, abilities that are necessary for independent study and mastering of the topic and which are based on interdisciplinary connections:

№№ p.p.	Discipline	Know	Be able
1	2	3	4
1.	Botany	Classification of LR	Distinguish the characteristics of different medicinal plants
2.	Organic chemistry	Physical and chemical properties of polysaccharides, glycosides, terpenoids, derivatives of aromatic series, heterocycles.	Carry out qualitative reactions; purification of organic compounds.

3.2. Contents of the topic.

Structural and logical scheme of the content of the topic



3.3. Recommended Books:

8. Literature

Basic literature

1. Фармакогнозія: підручник (I—III р. а.) / І.А. Бобкова, Л.В. Варлахова. – 3-є видання Всеукраїнське спеціалізоване видавництво «Медицина» 2018, 504с.

2. Фармакогнозія: базовий підручн. для студ. вищ. фармац. навч. закл.(фармац. ф-тів) IV рівня акредитації / В.С. Кисличенко, І.О. Журавель, С.М. Марчишин та ін.; за ред. В.С. Кисличенко. – Харків: НФаУ: Золоті сторінки, 2015. - 736 с.

3. Навчальний посібник з дисципліни «Фармакогнозія» / Я. В. Рожковський, Б. В. Приступа, І. А. Бойко, Н. В. Герасимюк, В. В. Черногорюк -: Методична розробка кафедри фармакогнозії ОНМедУ. – Одеса: ОНМедУ, 2019 – 51 с.

4. Державна Фармакопея України: в 3 т. / Державне підприємство «Український науковий фармакопейний центр якості лікарських засобів». – 2-е вид. – Харків: Державне підприємство «Український науковий фармакопейний центр якості лікарських засобів», 2015. – Т. 1. – 1500 с.

Additional literature:

- 1 Державна Фармакопея України: в 3 т. / Державне підприємство «Український науковий фармакопейний центр якості лікарських засобів». – 2-е вид. – Харків: Державне підприємство «Український науковий фармакопейний центр якості лікарських засобів», 2014. – Т. 3. – 732 с.
2. Практикум з ідентифікації лікарської рослинної сировини: навч. посіб. / [В. М. Ковальов, С. М. Марчишин, О. П. Хворост та ін.] ; за ред. В. М. Ковальова, С. М. Марчишин. – Тернопіль: ТДМУ, 2014. – 250 с.

3.4. Guidance card for self - study of a student with using the literature on the topic:

The main tasks	Instructions	Answers
1	2	3
<p><i>Examine:</i> Microscopic analysis</p> <p>Preparation of temporary drugs</p> <p>Conductive plant tissues</p> <p>Vascular fibrous bundles</p> <p>Bark</p> <p>The structure of the root</p> <p>Microscopic analysis</p> <p>Carrying out reactions to various biologically active substances</p>	<p>What is the purpose of microscopic analysis: _____.</p> <p>Technique of preparation of temporary drugs: _____.</p> <p>Conductive tissues of plants: a, b, c, d, d</p> <p>What types of vascular bundles do you know: a, b, c, d, e, e.</p> <p>Mechanical tissues of plants: a, b, c, d, d</p> <p>The composition of the bark includes: a, b, c, d, d</p> <p>Primary (a) and secondary (b) root structure</p> <p>Indifferent and enlightening liquids;</p> <p>The reaction to the mucus is carried out: a, the reaction is carried out as follows: _____.</p> <p>B - the reaction is carried out _____.</p> <p>The reaction to essential oils is as</p>	

	<p>follows: _____.</p> <p>To distinguish essential oils from fats use a solution: _____.</p> <p>The reaction to anthracene derivatives is as follows: _____.</p> <p>The reaction to tannins is as follows: _____.</p> <p>The reaction to fats is as follows: _____.</p> <p>The reaction to starch is as follows: _____.</p> <p>The reaction to woody fiber is as follows: _____.</p>	
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3.5. Materials for self-control.

3.5.1. Questions for self-control.

1. Origin and stages of development of pharmacognosy as a science.
2. Definitions: "medicinal plant", "medicinal raw materials"
3. The concept of biologically active substances and their classification
4. The main groups of LR and LRS in terms of BAS content, which are studied in the course of pharmacognosy.
5. The concept of identity and good quality of LRS.
6. Methods of pharmacognostic analysis.
7. What is the purpose of microscopic analysis?

3.5.2. Test tasks for self-control.

1. The name 'Fructus' is understood in pharmaceutical practice

- A. Fruits
- B. Roots
- B. Leaves
- G. Bark
- D. Aboveground part of plants

2. Under the name "Herba" in pharmaceutical practice is understood

A. The aboveground part of the herbaceous LR

B. Leaves

B. One-year LR

D. Perennial herb

D. Stems

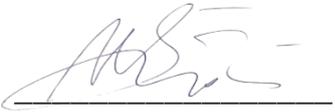
3. In which cases are LRS standardized for the content of extractive rather than specific active substances?

A. The active substances are not yet known

B. Very high content of active substances in raw materials

B. Very low content of active substances in raw materials

D. A method for quantifying active substances has not been developed.

Methodical recommendations were made by  associate professor Boyko IA