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**Federal State Autonomous Educational Institution Higher Education
"Peoples' Friendship University of Russia"**

Medical Institute

(name of the main educational unit (PMO) - the developer of the postgraduate program)

Department of General Pharmaceutical and Biomedical Technology

(name of the basic educational unit (BUE) - the developer of the postgraduate program)

SCIENTIFIC ACTIVITY PLAN

Scientific specialty:

3.4.1. Industrial Pharmacy and Drug Technology
(code and name of scientific specialty)

Scientific research is carried out as part of the implementation of the postgraduate program:

Drug Technology: Biopharmacy / Технология получения лекарств: Биофармация
(name of postgraduate program)

1. PURPOSE OF RESEARCH

The purpose of performing scientific research (carrying out scientific (research) activities) is the preparation of a dissertation for the scientific degree of a candidate of pharmaceutical sciences (hereinafter referred to as the dissertation) for defense.

Tasks of performing scientific research (carrying out scientific (research) activities):

- ensuring the formation of professional research thinking of graduate students, the formation of a clear idea of the main professional tasks, ways to solve them;
- formation of skills to develop work plans and programs for scientific research;
- preparation of data for compiling reviews, reports, scientific reports and publications;
- the formation of skills and abilities to conduct a scientific discussion, present research results in various forms (presentation, abstract, essay, analytical review, critical review, report, message, speech, scientific article of a review, research and analytical nature, etc.);
- gaining experience in independent organization of research activities.

2. PLANNED RESULTS OF SCIENTIFIC RESEARCH

Solving a scientific problem that is important for the development of technology for obtaining drugs.

Preparation of a dissertation for defense includes the implementation of an individual plan of scientific activity, writing, design and submission of a dissertation for final certification.

As a result of the training, the graduate student must:

know:

- methodology for conducting scientific research;
- modern technologies for searching and processing information;
- requirements for the quality, completeness and reliability of sources of scientific information used in scientific research;
- requirements for the presentation of the results of scientific research;

be able to:

- organize independent research work;
- identify, formulate actual problems in the area under study, set goals, determine the subject and objectives of the study;
- collect, systematize and study scientific literature in the field of the topic under study;
- conduct preclinical studies;
- analysis of regulatory documentation on the research topic;
- argue the results of their own scientific research and draw reasonable conclusions;
- present the results of scientific research in the form of completed research papers: reports, abstracts, papers, theses, scientific articles;

own:

- skills of independent research work;
- methods of research and experimental work and rules for the use of research tools;
- methods of analysis and processing of experimental and empirical data, means and methods of data processing;
- skills in the use of modern software for statistical data processing;

- scientific and theoretical approaches of domestic and foreign scientists on the problem under study, methods of analyzing data accumulated in the scientific industry on the research topic;
- methods of organization, planning, and implementation of scientific work, knowledge of the design of the results of research work .;
- public speaking skills;
- skills in preparing presentations and scientific reports, designing scientific articles and scientific work.

The plan of scientific activity of a particular student is approved in the individual plan of scientific activity of a postgraduate student, the requirements for which are established by the relevant local normative act of the RUDN University.

3. SCOPE OF RESEARCH

The total labor intensity of scientific research is 150 credits (5400 academic hours).

4. STAGES OF PERFORMING RESEARCH*

Table 5.1. Stages of scientific research

Stage name	Stage content (topics, activities)	labor input,ac.h.
Course 1		
Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense	The study of methodological recommendations for the organization and passage of research work. Receiving individual assignments. Individual consultations with the supervisor.	1476
	Formulation of the goal, objectives, prospects of the study. Determining the relevance and scientific novelty of the work. Formulation of the topic and structure of scientific work (together with the supervisor).	
	Acquaintance with scientific methods, technology of their application, methods of processing the obtained empirical data and their interpretation.	
	Writing the first chapter of the dissertation "Literature Review" on the research topic.	
Section 2. Preparation of publications that present the main scientific results of the dissertation	Preparation and publication of scientific articles in the journals of the list VAK, RSCI, SCOPUS, Vos.	216
Intermediate certification		72
TOTAL:		1764
2 course		
Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense	Conducting scientific research on the topic of research work.	1404
	Collection and generalization of material.	
	Statistical processing and analysis of the obtained data.	
	Presentation at scientific conferences, congresses, seminars with obligatory publication of abstracts	

Stage name	Stage content (topics, activities)	labor input,ac.h.
Section 2. Preparation of publications that present the main scientific results of the dissertation	Preparation and publication of scientific articles in the journals of the list VAK, RSCI, SCOPUS, Vos.	216
Intermediate certification		72
TOTAL:		1692
3 course		
Section 1. Scientific activity of a postgraduate student aimed at preparing a dissertation for defense	Interpretation of the obtained results, formulation of the conclusion, conclusions, practical recommendations based on the results of the research work.	1656
	Completion of the dissertation work.	
	Approbation of the obtained results of research work. Preparation of a scientific report and presentation on the results of the study.	
	Discussion of the results of the study at a meeting of the department.	
	Writing a dissertation abstract. Dissertation recommendation for official defense.	
Section 2. Preparation of publications that present the main scientific results of the dissertation	Preparation and publication of scientific articles in the journals of the list VAK, RSCI, SCOPUS, Vos.	216
Intermediate certification		72
TOTAL:		1944
TOTAL:		5400

6. LOGISTICS AND TECHNICAL SUPPORT OF SCIENTIFIC RESEARCH

Table 6.1. Logistics

Audience type	Audience equipment	Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary)
Teaching laboratory (943)	Audience for laboratory work, individual consultations, current control and intermediate certification equipped with a set of specialized furniture and equipment.	A set of specialized furniture; hardware: Notebook Lenovo ThinkPad E15-IML; multimedia projector Epson EB-X31, there is Internet access. Software: Microsoft products (OS, office suite, including MS Office / Office 365, Teams, Skype) list of

Audience type	Audience equipment	Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary)
Teaching laboratory (944)	Audience for laboratory work, individual consultations, current control and intermediate certification equipped with a set of specialized furniture and equipment.	specialized equipment, etc. A set of specialized furniture; technical means: video projector Epson EMP-S1 sch.1257, laptop Dell Vostro 7500, Internet access. Software: Microsoft products (OS, office suite, including MS Office / Office 365, Teams, Skype) list of specialized equipment, etc.
Teaching laboratory (946)	Audience for laboratory work, individual consultations, current control and intermediate certification equipped with a set of specialized furniture and equipment.	Set of 3 heating mantles for 250, 500 and 1000 ml flasks manufactured by Labtex Set of hydrometers AON-1 GOST 18481-81 Analytical balance I class ViBRA HT 224RCE Moisture Analyzer Vibra MD-83 Ultrasonic cleaner SONOREX DIGITEC DT 156 VH manufactured by Bandelin Bath water laboratory STEGLER WB-6 Dry oven with forced ventilation LOIP LF 120/300-VS1 Box of abacterial air environment for working with crops of bacteriological cultures that do not pose a threat to health operators BAVnp-01- "Laminar-S." Vibrodrive VP-3OT Scales ATILON ATL 120d4-1 analytical germanium Bath water double L N-2LABTEX Heidolph overhead laboratory stirrer with USB interface Hei-TORQUE 400 Precision Vacuum pump Germany Switch for 3 Heidoiph vaporizers Vacuum control unit Heidolph Vacuum valve Heidoiph AV-50Halogen moisture analyzer 0.02-50 Laborota 4002 control HB/G1. Heidolph programmable rotary evaporator Dish dryer STL 56 by Gerhardt

Audience type	Audience equipment	Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary)
Teaching laboratory (947)	An auditorium for laboratory work, individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and equipment.	Exhaust cabinet No. 1 IIIB-20 ND, orders, GF, GOSTs, scales with weights and electronic, measured laboratory glassware, mortars with pestles, scales with weights and electronic, evaporation cups, small laboratory equipment, heating devices, filters, hydrometers, electric stoves, water and sand baths, laboratory thermostat, mold for pouring out suppositories, pill machines, homogenizer, laboratory stirrer, steam sterilizer GK-10-1-"TZMOI" Box of abacterial air environment BAVnp-01-"Laminar-S"-1.2 Refractometer IRF-454 Bath water laboratory 8-seater H 19 V Hydro Refractometer with backlight and additional scale IRF-454 B2M Refrigerator pharmaceutical Pozis XB-140-1 Exhaust cabinet No. 2 ShV-202 Scales electronic laboratory Adam NSV-302 Cap crimping machine POK-1 Dish dryer STL 56 by Gerhardt Bath water laboratory four-seater LT-4 production Tare scales on column VA-4M Water bath - thermostat WB-4MS Dish dryer STL 56 by Gerhardt Analytical balance I class ViBRA HT 224RCE Water bath - thermostat WB-4MS Exhaust cabinet No. 2.ShV-202
For independent work of students	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to the EIOS.	

7. RESEARCH METHODS

Scientific research is carried out both in structural subdivisions of RUDN University or in organizations of Moscow (stationary), and at bases located outside of Moscow (offsite).

Conducting scientific research on the basis of an external organization (outside RUDN University) is carried out on the basis of an appropriate agreement, which specifies the terms, place and conditions for performing scientific research in the base organization.

The deadlines for the implementation of scientific research correspond to the period indicated in the calendar academic schedule of the postgraduate program. The timing of the internship can be adjusted upon agreement with the Department for the Training of Highly Qualified Personnel of the RUDN University.

8. EDUCATIONAL-METHODOLOGICAL AND INFORMATION SUPPORT FOR SCIENTIFIC RESEARCH

Main literature:

1. State Pharmacopoeia of Russia. — XIV Edition.
2. British Pharmacopoeia.
3. European Pharmacopoeia. — 3333 p.
4. The International Pharmacopoeia. — WHO Geneva. — V. 1—4.
5. The Japanese Pharmacopoeia. — 1788 p.

Additional literature:

1. Raizberg B.A. Dissertation and academic degree. M., 2011.
2. Yarskaya V.N. Methodology of dissertation research. How to defend a dissertation. M., 2011.

Resources of the information and telecommunications network "Internet":

1. RUDN ELS and third-party ELS, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System - RUDN EBS <http://lib.rudn.ru/MegaPro/Web>
- ELS "University Library Online" <http://www.biblioclub.ru>
- EBS Yuray <http://www.biblio-online.ru>
- EBS "Student Advisor" www.studentlibrary.ru
- EBS "Lan" <http://e.lanbook.com/>
- EBS "Trinity Bridge"

2. Databases and search engines:

- electronic fund of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>
- Medical online library MedLib (<http://med-lib.ru/>).
- Higher Attestation Commission (HAC) - <http://vak.ed.gov.ru/>

Educational and methodological materials for scientific research:*

1. Guidelines for conducting scientific work, preparing a dissertation, scientific publications.

* - all educational and methodological materials for scientific research are posted in accordance with the current procedure on the practice page in TUIS!

8. EVALUATION MATERIALS AND ASSESSMENT SYSTEM OF STUDENTS ON THE RESULTS OF THE PERFORMANCE OF SCIENTIFIC RESEARCH

Mandatory activities of the student:

1 year of study:

- independent study of the recommended methodological literature necessary for the implementation of research work, familiarization with the research program;
- together with the supervisor, drawing up a work plan for conducting scientific research;
- formulation of the goal, objectives, prospects of the study. Determining the relevance and scientific novelty of the work. Formulation of the topic and structure of scientific work (together with the supervisor);
- preparation and discussion at the department of the concept of the dissertation and approval of the topic;
- study and review of scientific literature (foreign and domestic) on the subject of dissertation work;
- familiarization with scientific methods, technology of their application, methods of processing the obtained empirical data and their interpretation;
- writing the first chapter of the dissertation "Literature Review" on the research topic;
- participation in the research work of the specialized department
- presentation at a scientific conference;

2 year of study:

- Pconducting scientific research on the topic of research work;
- collection and generalization of material;
- statistical processing and analysis of the obtained data;
- preparation and discussion at the department of part of the dissertation;
- presentation at scientific conferences, congresses, seminars with obligatory publication of abstracts;
- publication of at least two scientific articles, including one scientific article on the research topic in a publication included in the list of the Higher Attestation Commission and / or RUDN University or SCOPUS, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;
- participation in the research work of the specialized department.

3 year of study:

- interpretation of the results obtained, formulation of conclusions, conclusions, practical recommendations based on the results of research work;
- preparation of the entire dissertation and presentation to the supervisor;
- publication of at least three scientific articles, including two scientific articles on the research topic in publications included in the list of the Higher Attestation Commission and / or RUDN University and SCOPUS, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;
- speaking at conferences;

- participation in the research work of the department;
- summing up the results of research work;
- preparation of a scientific report and presentation;
- discussion of the results of scientific research at a meeting of the department;
- writing a dissertation abstract.

Based on the results of the stages of identifying scientific research, the graduate student submits a detailed oral or written report to the supervisor or to the meeting of the department. The report includes information characterizing the content of the postgraduate student's work and reflecting the implementation of scientific research.

The report should include information about:

- about the degree of readiness of the dissertation;
- on the preparation and publication of articles in journals included in the list of the Higher Attestation Commission, RSCI, Scopus, Web of Science and others equivalent to them and / or approved by the RUDN Academic Council;
- about the participation of a graduate student in scientific and technical events on the topic of his research;
- on participation in the research work of the department (with participation);
- other.

During the period of interim certification, the supervisor provides feedback on the quality, timeliness and success of the postgraduate student's stages of scientific (research) activities.

The results of scientific research for each year of study are determined by conducting an intermediate certification with grading "excellent", "good", "satisfactory", "unsatisfactory" and in the ECTS system (A, B, C, D, E). The basis for their nomination is the point-rating system adopted at the University.


DEVELOPERS:

Head Department of General Pharmaceutical and Biomedical Technology		S.N. Suslina
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Docent, Department of General Pharmaceutical and Biomedical Technology		R. Mussa
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Assistant of the Department of General Pharmaceutical and Biomedical Technology		D.V. Radeva
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HEAD OF BUP:

Head Department of General Pharmaceutical and Biomedical Technology		S.N. Suslina
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