**Postgraduates Programme Report**

**A- Basic Information**

**Programme title: Doctorate (MD) in Clinical Pharmacology.**

 **Programme type:** Single Double Multiple

**Departments:** 1-Clinical Pharmacology department

 2-Public health department.

 **Coordinator:** Prof. Dr. Mohammed Shehatta

 Prof. Dr. Ebtesam Abdelal Ahmed

 **External evaluator:** Prof. Dr. Ahmed Mohammed Selim. (Professor of pharmacology Benha University). Prof. Dr. Abdel Hamed Mohammed Ahmed Elhawary. (Professor of pharmacology Benha University)

**Year of operation: 2020**

**B- Statistic**

**1-** No. of students starting the programme: **three**

2- Ratio of students attending the programme this year to those of last year**: 3:0**

3- No. and percentage of students passing in each year **100%**

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| --- | --- | --- |
| **Year of study** | **Percent of successful students** | **of failed****students** |
| 2020 | 100% | 0% |
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**4- No. of students completing the programme and as a percentage of those who started: 100%**

**5- Grading: No. and percentage in each grade:**

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| **Academic****year** | **Excellent** | **Very good** | **Good** | **Fair** |
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**6-First destinations of graduates**

**Percentages of the graduating cohort who have**

i. Proceeded to appropriate employment:

ii Proceeded to other employment:

iii Undertaken postgraduate study:

iv. Engaged in other types of activity:

v. Unknown first destination:

**C- Professional Information**

***Academic Standards***

**3a.** Generic standards of postgraduate programmes prepared by National Authority of Quality Assurance and Accreditation of Education (NAQAAE).

**المعاييرالقياسية العامة لبرامج الدراسات العليا التي أعدتها الهيئة القومية لضمان جودة التعليم والاعتماد (2009)** **فبراير**

**3b.** External reference (Benchmark) (attached): Doctorate degree in Doctoral Program in Pharmacology & Toxicology Programme of Michigan State University

**3c**. Matrices:

1. Comparison between the intended learning outcomes (ILOs) of the Faculty of Medicine Zagazig university MD in Clinical Pharmacology programme and that of the Generic Academic standards of postgraduate programme prepared by National Authority of Quality Assurance and Accreditation of Education.
2. **Achievement of programme intended learning outcomes ILOs:**

**By the end of the MD programme in Clinical Pharmacology the candidate became able to:**

**A- Knowledge and Understanding**

1. Outline molecular basis of cell signaling to detect possible targets for drug action.
2. Discuss molecular basis of different receptor types and explain how to be modulated by different pharmacological actions.
3. Explain different types of 2nd messengers and how to be adjusted by different physiological, pathological and pharmacological agents.
4. Identify the impact of genetic polymorphism on drug action and elimination (pharmacogenetics).
5. Discuss pharmacokinetic and pharmacodynamic principles and their relation with drug action.
6. Explain basics of chromatography with stress on HPLC as an essential methodology to detect pharmacokinetic properties of drugs.
7. Discuss molecular biology basics especially gene expression as a method for monitoring drug effects on different body systems and on cytochrome P450 system.
8. Discuss molecular basis of cardiovascular diseases as a target of pharmacotherapy.
9. Explain pathogenesis of arrhythmia and how to be manipulated by different classes of antiarrhythmic drugs.
10. Discuss neurotransmission and neuromodulation with special stress on long term potentiation (LTP) as the main mechanism of different CNS disorders and as a target for pharmacotherapy.
11. Discuss cytokines and other immunity modulating molecules as a target for treatment of immune-related disorders, cancer and transplant rejection and as a method for introducing new therapies in medicine e.g. monoclonal antibodies.
12. Explain basis of biophysics regarding gas movement between different media and its application in general anesthesia.
13. Identify new concepts in pathogenesis and treatment of diabetes mellitus.
14. Explain basics of cell culture and its applications in experimental pharmacology.
15. Outline comparative anatomy and physiology to be familiar with experimental animal models, their anesthesia and surgery.

**B: Intellectual Skills**

1. Integrate facts about function of different organs sub serving homeostasis.
2. Solve medical problems related to diagnosis & treatment of some medical disorders.
3. Observe scientific phenomena during the practical study.
4. Interpret different information about drugs to select the most appropriate agent to be used for certain pathology.
5. Analyze different data about drug groups used for certain pathology to choose the proper agent used in a certain patient e.g. with other comorbidity.
6. Interpret basic pharmacological data about drugs to use them in a proper way regarding dose, dosage interval and duration of therapy.
7. Solve problems to attain different pharmacokinetic data about drugs e.g. bioavailability, half-life, volume of distribution, etc.
8. Interpret between pharmacological actions of different dugs to gain knowledge about drug-drug interactions.
9. Design a research protocol and clinical trials.
10. **Professional/practical skills**
11. Perform different methods for disease induction in experimental animals with stress on breeding knock-out, knock-down or knock-in mice as models for genetic disorders.
12. Perform different methods for disease induction in experimental animals with special restrain on induction of neurological disorders.
13. Perform some operative methods in experimental animals e.g. coronary artery ligation & renal artery ligation needed for induction of cardiovascular pathologies.
14. Record ECG changes and arterial blood pressure in response to different drugs in experimental animals.
15. Record changes in nerve and muscle electrical activities and neuromuscular conduction.
16. Perform different pharmacokinetic studies on selected drugs using *HPLC*.
17. Perform mRNA extraction and amplification using PCR techniques as a method for monitoring drug effects at the nucleus level.

**D- General &Transferable skills**

1. Be prepared for lifelong learning.
2. Use information and communication technology effectively.
3. Retrieve, manage and manipulate information by all means including electronic means.
4. Develop & make database search in the library & internet.
5. Present information clearly in written, electronic and all forms.
6. Communicate ideas and arguments effectively.
7. Work effectively within a team.
8. Analyze and use numerical data including the use of simple statistical methods.
9. Effectively manage time and resources and set priorities.
10. Use Evidence-Based Medicine in managing decisions.
11. Communicate efficiently, sensitively and clearly with colleagues.
12. Demonstrate application of ethics.
13. Cope with the changing work environment.
14. Evaluate the work using constructive feedback.

 **Achievement of programme aims:**

**At the end of this course the candidate became able to build the competencies** in the fields of clinical and experimental pharmacology including different body systems with the goal of preparing researchers in some specialized fields including receptor mapping and cloning, gene therapy, alternative medicine, cell culture use in pharmacology, molecular pharmacology and neuropharmacology. In addition, the candidate had a wide vision about development of new methods and tools to analyze and criticize any research scientifically, and to use different technological methods which add to his/her Professional applications.

**10.** Progress of previous year’s action plan

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| --- | --- | --- | --- | --- |
| **Action** | **Man in charge** | **Time** | **Actual achievement** | **Reason for delay and Solution** |
| **Make an official****Facebook page****For postgraduate****Students** | **Staff members** | **2019-2020** | **100%achived** |  |

**11. Action plan**

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| **Actions required** | **Time from to** | **Person responsible** |
| **Special units for** |  |  |
| **Postgraduate and** | **2020-2022** | **Staff members** |
| **Central lab** |  |  |
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**Program Coordinator** Prof. Dr. Mohammed Shehatta

 Prof. Dr. Ebtesam Abdelal Ahmed