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R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)
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College is recognized under Section 2(f) & 12(B) of the UGC Act 1956
Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

Department of Biotechnology

On Job Training Completion Report

This is to certify that MISS. ESHA DUBEY has completed On Job Training at

Vertex Diagnostics Centre

Date of Commencement	Date of Completion	Total Number of Days	Total Number of Hours completed in OJT
29 December 2023	31 January. 2024	34 Days.	204 hours.

Name of the Guide/ PI/ Incharge : Abhishek R. Pandey

Phone Number of Guide/ PI/ Incharge : 9004977587

Email Address of the Guide/ PI/ Incharge : visitvertexdiagnostic@gmail com

Ramniranjan Jhunjhunwala College Mumbai-86 NAAC Re-Accredited "A" Grade

R.K.

Gupta 22-03-24

Abhishek

Signature of Guide/ PI/ Incharge

VERTEX DIAGNOSTIC CENTRE

Stamp

Name :- Esha V.K Dubey.
Class :- MSc BT
Roll no. :- 407

Report on On job Training in Pathology Laboratory

Location :- Vertex Diagnostic centre , kalyan (east)

Date of Training :-29 th December 2023 to 31 st January 2024 .

Trainer:- Abhishek pandey.

Introduction:-

The purpose of this report is to provide an overview and evaluation of the one-month training experience in the pathology laboratory.

Objective:-

The primary objective of the training was to gain practical knowledge and skills in various aspects of pathology laboratory procedures and techniques.

Training Content:-

During the training period, the following topics were covered:

1. **Introduction to basic laboratory safety protocols** :-

During the training I received a chance to get knowledge about the good laboratory practice

2.**Observance of Handling and processing of different types of samples:-**

During the training I received a chance to observe the handling and processing of different types of the sample such as urine and blood samples .

3.**Observance of routine laboratory tests**:-

During the training I received a chance to observe laboratory tests such as lipid Profile test, Renal Function Test, liver Function Test, Fever profile Test, Complete Blood count and urine analysis etc.

4. **Introduction to staining techniques** :-

During the training I got an idea on how to make blood smear and stain it.

5. **Familiarisation with laboratory equipment and instrumentation** :-

During the training I received a chance to familiarise myself with lab equipment such as Biochemistry unit (Semi automatic machine), electrolyte analyzer , Hematology analyzer and centrifuge machine.

6. **Knowledge of test** :-

During the training I received a chance to know about the principle, normal range and protocol of various tests such as Lipid Profile test, Renal Function Test, liver Function Test, Fever profile Test, Complete Blood count and urine analysis etc.

a) **Lipid Profile Test** :- In Lipid Profile Test I have observed the cholesterol, HDL,LDL and Triglyceride test etc.

b) **Renal Function Test** :- In Renal Function Test I have observed the uric acid test, Electrolyte, Phosphorus and urea etc.

c) **Liver Function Test** :- In liver Function Test I have observed the Bilirubin test, SGOT, SGPT , Total Protein and Albumin etc.

d) **Fever Profile Test** :- In Fever Profile Test I have observed the CBC, ESR ,CRP and widal test etc.

Challenges Faced:

Some of the challenges encountered during the training included:
1. Limited exposure to certain specialised procedures due to time constraints.
2. Difficulty in interpreting microscopic findings initially.

Achievements:-

Despite the challenges, the training experience yielded the following achievements:
1. Improved understanding of laboratory protocols and procedures.
2. Enhanced proficiency in specimen handling and processing.
3. Developed skills in microscopic examination and interpretation.
4. Increased confidence in performing routine laboratory tests independently.

Conclusion:-

In conclusion, the one-month training in the pathology laboratory provided valuable practical experience and knowledge, contributing to professional growth and development in the field of pathology.

Acknowledgments:-

I extend our gratitude to the staff and mentors at the pathology laboratory for their support and guidance throughout the training period.

Name :- Esha V.R Dubey.
Class :- MSc-BT
Roll no. :- 407

Report on Hands-on Training on Karyotyping

Trainer name :-Dr. Possam

Venue: Rj college (Biotech lab) , Ghatkopar

Introduction:-

The hands-on training on karyotyping aimed to provide a practical experience in the analysis of chromosomal abnormalities using karyotyping techniques. Karyotyping is a fundamental tool in cytogenetics and plays a crucial role in diagnosing genetic disorders.

Objectives:-

1. Familiarised with the principles of karyotyping.
2. Got hands-on experience in sample preparation, chromosome staining, and analysis.
3. Understanded the significance of karyotyping in clinical diagnosis and research.

Training Sessions:-

1.**Introduction to Karyotyping**: The training began with an overview of karyotyping techniques, including sample collection, cell culture, and chromosome preparation.

2. **Sample Preparation:** We learned techniques for obtaining high-quality metaphase spreads from cell cultures, including slide preparation.

3. **Chromosome Staining**: Practical sessions were conducted on staining protocols, emphasising the importance of banding patterns and their significance in chromosome identification.

4. **Microscopy and Analysis**: We were trained in using Binocular microscopes equipped with imaging software to analyse stained chromosomes, identify abnormalities, and interpret karyograms.

5. **Instrumentation** : The training also covered the principle, instrumentation and working of several instruments like CO 2 incubator, autoclave, laminar air flow etc.

Hands-on Practice:

We had ample opportunity for hands-on practice, working individually under the supervision of possam mam . They were encouraged to ask questions and seek clarification throughout the sessions.

Protocol used for for karyotyping :-

1. **Planting**:-
   Obtain a sample of cells, usually from blood, amniotic fluid, bone marrow, or tissue biopsy.
2. **Cell Culturing**:- Place the cells in a culture medium containing nutrients and growth factors to encourage their growth. This step allows the cells to divide and multiply.
3. **Arresting Cell Division:** Treat the cells with a colcemid substance that stops them from dividing at a specific stage of the cell cycle, usually during metaphase. This allows for the visualisation of chromosomes at their most condensed state.
4. **Harvesting Cells**: Once the cells have reached the appropriate stage (usually after 48-72 hours), collect them from the culture.
5. **Preparation of Chromosomes**:- Treat the harvested cells with a hypotonic solution to swell them and burst the cell membranes, releasing the chromosomes.
6. **Banding:-**the chromosomes with a dye, such as Giemsa, to visualise the banding patterns.
7. **Microscopic Analysis**:- Examine the stained chromosomes under a light microscope. Analyse the banding patterns, chromosome size, centromere position, and any abnormalities.
8. **Photography and Documentation**: Capture images of the chromosomes using a camera attached to the microscope. Document any abnormalities observed.
9. **Karyotype Analysis**:-Arrange the chromosomes in pairs according to size, banding pattern, and centromere position. This arrangement is called the karyotype.

Conclusion:

The hands-on training on karyotyping provided us with valuable practical skills and insights into the field of cytogenetics. By the end of the training, we got a demonstration on a competence in sample preparation, staining techniques, microscopy, and interpretation of karyograms.

Acknowledgments:-

I extend our gratitude to the Rj college teachers (biotech department) for their valuable contributions in organising and conducting the training sessions.