

A STUDY ON THE MANUFACTURING OF TABLETS

Report on Internship Training submitted to Periyar university, Salem in partial fulfilment
of requirement for the award of the degree of

BACHELOR OF CHEMISTRY

Submitted by

NAME : ELAKIYA. P

REG.NO : C21UG152CHE012

Under the Supervision of

Mr. SHIVA KUMAR

Micro labs, Sipcot



DEPARTMENT OF CHEMISTRY

ST. JOSEPH'S COLLEGE OF ARTS AND SCIENCE FOR WOMEN, HOSUR

(Affiliated to Periyar University , Salem)



PERIYAR UNIVERSITY

INTERNSHIP TRAINING REPORT

1.	Name of the Candidate	Elakiya. P
2.	University Examination Registration Number	C21UG152CHE012
3.	Name of the college	St. Joseph's College of Arts and science for women , Hosur
4.	Name of the Department/Degree	Chemistry/B.sc Chemistry
5.	Name of the industry/ Institute in which for internship Training Undergone	Micro labs, Sipcot
6.	Guide / Supervisor under whom the training undertaken	Mr. Shiva Kumar
7.	Title of the Training	Packing and Raw Materials
8.	Brief output training (not more than 2 Pages)	Annexure Enclosed
9.	Conclusion	To know about various Products
10.	Outcome of the training	To ensure the quality of the product in a good manner

Submitted for B.Sc., Internship Examination held on 14.11.23 at the Department of chemistry , St. Joseph's college of Arts and science for women, Hosur 635 126

P. Elakiya.

Signature of the
Student

Prof.

Signature of the
Guide

S. V. J. M. S.

Head of the
Department

PRINCIPAL
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Mookandapalli, Sipcot,
HOSUR - 635 126, Krishnagiri - Dist.
Principal

Examiner:

1.

2..

Date: 10/02/2023


STUDENT INTERNSHIP COMPLETION CERTIFICATE

This is to certify that Mr./Ms. ✓ ELAKIYA.P. (C21UG152CHEC12).

✓ I / ✓ II / ✓ III / ✓ IV year student/students of B. Pharm. / M. Pharm. / B. Sc. / M.Sc., Chemistry / Bio
Chemistry / Bio Technology / Micro Biology / MBA/MSW from St. Joseph's
College of Arts And Science For women
College / Affiliated to Periyar University has/have successfully
completed Internship Training / Project work from 27/01/2023 to 10/02/2023.

We wish him/✓her/them all success in their future endeavours.

For MICRO LABS LIMITED

 Authorised Signatory



Production of Packing and Raw Materials

Introduction:

I had attended my internship Training in micro labs. There I have learned the working in the Production of packing and Raw Materials.

Abstract:

The various industries are producing many Products. In that I have seen the packing of tablets in the Production of packing and Raw Materials in that company.

- The Staff members helped us in showing various departments. And they guided us in teaching the manufacture of tablets and they packed the tablets in different foils.

Quality control:

They involve a set of process by which quality of all factors involved in the Production are analysed.

Quality control is checked in three different stages :

1. Raw Materials analysis
2. In process sample analysis
3. Finished Products.

Packing:

- Analysis of every Materials used in packing .
- Packing can be classified into three categories :

1. Primary (foils)
2. Secondary (cotton box, Leaflets)
3. Tertiary (shippers).

Analysis of foil:

1. Blister : soak in ethyl acetate for half an hour and check its weight whether it pass the range of pass limit description (PLD)
2. Strip foil : soak in acetic acid for 2 hours and check their weights whether it passes the range of pass limit description (PLD). Strip foil and blister can either be plain foil or printed foil after soaking in respective time limits and medium.
3. Form pack : soak in acetic acid for 24 hours and check their weights whether it passes the range of pass limit description (PLD). It will be plain foil after soaking .

Gelatinous test (form pack) :

0.25 of foil + 6 chemicals HCL 10 ml, sodium hydroxide 5g, 1M sodium hydroxide 4.3g solution, ammonium chloride 5.3g glycerol 85 ml) gives white precipitate.

Test for Gram (for cotton and Leaflets):

Gram= (weight of cut piece in gram / area of cut piece in square centimeter) • 10000.

Conclusion:

My experience in Micro labs was useful and I developed more skills in it . It helped to gain more knowledge about that packing Materials of tablets in the foils. Foils are different for each tablets and Raw Materials. This was new experience in company and it will be useful for our future development in our career.

A Study on the quality control section

Report on Internship Training submitted to Periyar university, Salem in partial fulfilment
of requirement for the award of the degree of

BACHELOR OF CHEMISTRY

Submitted by

NAME : INDHU.A

REG.NO : C21UG152CHE014

Under the Supervision of

Dr.Sivakumar.

Microlabs Pvt Ltd, Hosur.



DEPARTMENT OF CHEMISTRY

ST. JOSEPH'S COLLEGE OF ARTS AND SCIENCE FOR WOMEN, HOSUR

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PERIYAR UNIVERSITY

INTERNSHIP TRAINING REPORT

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4.	Name of the Department/Degree	Chemistry/Bsc.Chemistry..
5.	Name of the industry/ Institute in which for internship Training Undergone	Microlabs private limited.
6.	Guide / Supervisor under whom the training undertaken	Sivakumar sir and Prabhakaran sir(Head of Quality control department)
7.	Title of the Training	Quality control section
8.	Brief output training (not more than 2 Pages)	Annexure Enclosed
9.	Conclusion	Enclosed
10.	Outcome of the training	To ensure that the service provided met the specifications

Submitted for B.Sc., Internship Examination held on 14.11.23 at the Department of chemistry, St Joseph's College of arts and science for women , Hosur.

A. Indhu.

Signature of the
Student

Examiner:

1.

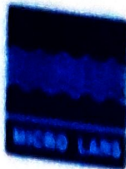
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S.V. Jhany

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STUDENT INTERNSHIP COMPLETION CERTIFICATE

Date: 10/02/2023

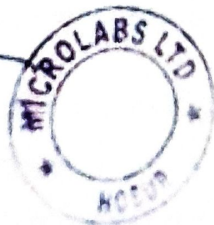
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College / Affiliated to Periyar University has/have successfully
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We wish him/her/them all success in their future endeavours.

For MICRO LABS LIMITED


Authorised Signatory



Quality control of raw materials

Introduction:

I attended my internship program in Microlabs private limited. There I learned the working and production of their products in large industrial scale.

Abstract:

The various pharmaceutical and medical relate products are being produced in the company. Most of the products are related to tablets, capsules, ointments etc., which makes them one of the largest manufacturer in it. I have learned about the various packing methods, few steps in Quality control. The manufacturing unit was maintained with good condition.

- The faculties and the staffs working there were Kind and didn't hesitate when asked about their products and other information regarding their production
- We were given internship program for two weeks. They gave demonstration on the working of instruments used for sampling.

Methodology:

They first equipped us with safety equipment and then allowed into the package area. They explained about

various packing methods like strip packing, bulk packing, Alu alu packing. It involves 3 stages like primary, secondary and tertiary. They used plastics like pvc , PE ,PET.

In case of quality control ,the uv spectroscopy Which measures and interprets the electromagnetic spectra that result from the interaction between Electromagnetic radiation and matter. It consists of a light source , dispersion element, sample and a detector to analyze the sample.

Discussion:

I have learned about the primary sampling of compounds and it's bulk production. Various instruments like Uv spectrometer and primary, secondary and tertiary sectors had their own machineries to pack the products.

Conclusion:

My overall experience in the internship program in Micro labs private limited helped me to gain new experience and gain more knowledge about the testing and manufacturing of pharmaceutical products . The staffs were so helpful and taught us about the overall industrial and have an idea on how Pharma companies function ,produce their products and quality control sections.

A STUDY ON THE MANUFACTURING OF TABLETS

Report on Internship Training submitted to Periyar university, Salem in partial fulfilment
of requirement for the award of the degree of

BACHELOR OF CHEMISTRY

Submitted by

NAME : JAYAPRIYA. Y

REG.NO : C21UG152CHE016

Under the Supervision of

Mr. Sivakumar

MICROLABS LIMITED, HOSUR. .



DEPARTMENT OF CHEMISTRY

ST. JOSEPH'S COLLEGE OF ARTS AND SCIENCE FOR WOMEN, HOSUR

(Affiliated to Periyar University, Salem)



PERIYAR UNIVERSITY

INTERNSHIP TRAINING REPORT

1.	Name of the Candidate	Jayapriya. Y
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3.	Name of the college	St. Joseph College of Arts and Science for Women
4.	Name of the Department/Degree	B. SC Chemistry
5.	Name of the industry/ Institute in which for internship Training Undergone	Microlabs Limited - Hosur
6.	Guide / Supervisor under whom the training undertaken	Mr. Sivakumar
7.	Title of the Training	Manufacturing of Tablets
8.	Brief output training (not more than 2 Pages)	Annexure Enclosed
9.	Conclusion	Production of Tablet
10.	Outcome of the training	To ensure that a product manufactured (or) service provided met the specification

Submitted for B.Sc., Internship Examination held on 14.11.2023 at the Department of B. Sc chemistry, Hosur.

Jayapriya. Y
Signature of the Student

Signature of the Guide

S.V. Murugesu
Head of the Department

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College, Affiliated to Periyar University has/have successfully
completed Internship Training / Project work from 24/01/2023 to 06/02/2023

We wish him/✓her/them all success in their future endeavours.

For MICRO LABS LIMITED


Authorized Signatory



ABOUT THE COMPANY

Micro Labs Limited is a multi-faceted healthcare organization established in 1973 by G.C. Surana. The company is a front runner in the pharmaceutical industry with

- Proficient marketing team,
- State-of-the-art manufacturing facilities
- International standards R&D center

MICROBIOLOGY

The Role of the Microbiologist is to ensure the quality of raw materials before they are processed in the production area, monitor the microbiological quality of Environment (air monitoring) and water, and validate the test methods used in testing finished products, and test finished products from microbiological prospective.

♦ The Growth Promotion test

The growth promotion test is an important quality control function in the pharmaceutical industry. It is imperative for establishing the ability and nutritive property of any media used to support growth when the inoculum contains a small number of microorganisms.

♦ Microbial Limits Test

This test is used to estimate the total number of viable microorganisms or specific pathogens present in pharmaceutical products as tablets, capsules, oral suspensions, injectable, ophthalmic and nasal solutions and other medical devices. It is based on the principle that any viable microbial cell present in a sample will produce a single colony when provided with a growth medium and favourable growth conditions.



Enumeration test

The finished products and raw materials which is referred as TAMC (Total Aerobic Microbial Count) and TYMC (total combined yeast and Mould), the purpose of these tests is to find the number of bacteria and fungi found in the tested material and whether it is in the limit or not, the limit is defined from USP (United States Pharmacopeia), EP (European pharmacopeia), BP (British Pharmacopeia) or the pharmacopeia used in the country of the lab.

The enumeration of these colony-forming units (CFU) gives an estimate of the microbial population of the product. The microbial content of the product includes the total bacterial count (TBC), total yeast and mould count (TYMC). These tests are mandatory for the release of drug products.

Water Testing

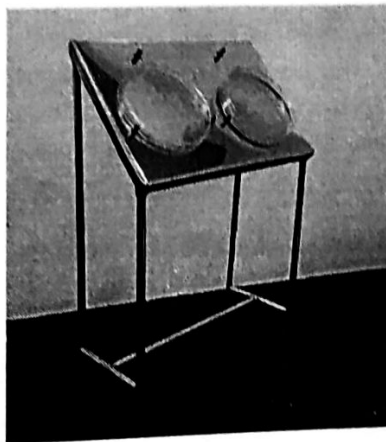
Water is one of the major commodities consumed by the pharmaceutical industry. Total viable count is studied to rule out microbial contamination. Tests for presence of coliforms, E.coli and any other pathogens as Pseudomonas sp. Clostridia, Salmonella, Staphylococcus et c. are performed.

membrane filtration technique:

- Collect the sample and make any necessary dilutions.
- Select the appropriate nutrient or culture medium. Dispense the broth into a sterile Petri dish, evenly saturating the absorbent pad.
- Flame the forceps, and remove the membrane from the sterile package. Place the membrane filter into the funnel assembly.
- Flame the pouring lip of the sample container and pour the sample into the funnel.
- Turn on the vacuum and allow the sample to draw completely through the filter.
- Rinse funnel with sterile buffered water. Turn on the vacuum and allow the liquid to draw completely through the filter.
- Flame the forceps and remove the membrane filter from the funnel.
- Place the membrane filter into the prepared Petri dish.
- Incubate at the proper temperature and for the appropriate time period.
- Count and confirm the colonies and report the results

settle plate Method

Settle plate sampling is a direct method of assessing the likely number of microorganisms depositing onto the product or surface in a given time. It is based on the fact that, in the absence of any kind of influence, airborne microorganisms, typically attached to larger particles, will deposit onto open culture plates. The number of microbe bearing particles deposited onto the agar surface of the plate over the period of exposure is ascertained by incubation of the plate and counting the number of microbial colonies, more commonly known as colony forming units (CFU). The microbial deposition rate may be reported as the number depositing in a given area per unit time.



CONCLUSION

Internship at the Micro Labs was very useful to us; we had good exposure over the pharmacy related side and had good experience too. This internship helped us to define what skills and knowledge we have to improve in the coming time.

A Study on the Quality Control Section

Report on Internship Training submitted to Periyar university, Salem in partial fulfilment
of requirement for the award of the degree of

BACHELOR OF CHEMISTRY

Submitted by

NAME : JEEVITHA.S

REG.NO : C21UG152CHE017

Under the Supervision of

Mr.Vijayakumar sir .

Micro labs Private Limited, Hosur



DEPARTMENT OF CHEMISTRY

ST. JOSEPH'S COLLEGE OF ARTS AND SCIENCE FOR WOMEN, HOSUR

(Affiliated to Periyar University , Salem)



PERIYAR UNIVERSITY

INTERNSHIP TRAINING REPORT

1.	Name of the Candidate	Jeevitha.S
2.	University Examination Registration Number	C21UG152CHE017
3.	Name of the college	St.Joseph's college of Arts and Science for Women,Hosur - 635126
4.	Name of the Department/Degree	Chemistry/ Bsc.Chemistry.,
5.	Name of the industry/ Institute in which for internship Training Undergone	Microlabs private limited, Hosur.
6.	Guide / Supervisor under whom the training undertaken	Sivakumar sir and Prabhakaran sir (Head of Quality control department)
7.	Title of the Training	Examining the quality of the raw materials.
8.	Brief output training (not more than 2 Pages)	Annexure Enclosed
9.	Conclusion	To determine the quality of the raw materials.
10.	Outcome of the training	To ensure the product manufacturing and packing met the specifications.

Submitted for B.Sc., Internship Examination held on 14.11.2023 at the Department of Chemistry, St.Joseph's College of Arts and Science for Women, Hosur - 635126

PRINCIPAL

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Mookandapalli, Sipcot, HOSUR - 635 126, Krishnagiri - Dist.

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S. Jeevitha

Signature of the Student

Examiner:

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Head of the Department



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Chemistry/ Bio Technology / Micro Biology / MBA/MSW from St. Joseph's
College of Arts And Science for women
College, Affiliated to Periyar University has/have successfully
completed Internship Training / Project work from 27/01/2023 to 10/02/2023.

We wish him/her/them all success in their future endeavours.

For MICRO LABS LIMITED

 Authorised Signatory



Quality control of raw materials 7.11.11 12:11:11

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Report on Internship Training submitted to Periyar university, Salem in partial fulfilment
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BACHELOR OF CHEMISTRY

Submitted by

NAME : KAVYA. M

REG.NO : C21UG152CHE019

Under the Supervision of

Mr . SIVAKUMAR

Microlab Pvt Ltd, Hosur.



DEPARTMENT OF CHEMISTRY

ST. JOSEPH'S COLLEGE OF ARTS AND SCIENCE FOR WOMEN, HOSUR

(Affiliated to Periyar University , Salem) *



PERIYAR UNIVERSITY

INTERNSHIP TRAINING REPORT

1.	Name of the Candidate	Kavya. M
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3.	Name of the college	St. Joseph's College of Arts and Science for Women, Hosur
4.	Name of the Department/Degree	Chemistry/B. Sc. , Chemistry
5.	Name of the industry/ Institute in which for internship Training Undergone	Microlab Pvt Ltd, Hosur
6.	Guide / Supervisor under whom the training undertaken	Sivakumar
7.	Title of the Training	Manufacturing of tabletes
8.	Brief output training (not more than 2 Pages)	Annexure enclosed
9.	Conclusion	Production of medicines
10.	Outcome of the training	To ensure that the products was manufactured

Submitted for B.Sc., Internship Examination held on 14/11/2023 at the Department of Chemistry St. Joseph's College of Arts and Science for Women, Hosur.

Kavya. M

Signature of the Student

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Signature of the Guide

S.V. Jeyaraj

Head of the Department

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We wish him/her/them all success in their future endeavours.

For MICRO LABS LIMITED


Authorised Signatory



ABOUT THE COMPANY

Micro Labs Limited is a multi-faceted healthcare organization established in 1973 by G.C.Surana. The company is ranked 19th among all Pharmaceutical companies in India. They export their Products to over 68 countries across the world.

The company is a front runner in the pharmaceutical industry With

- Proficient marketing team,
- State-of-the-art manufacturing
- facilities International standards R&D centers

Major Products :

Dolo-650, Amlong, Lubrex, Diapride, Vildapride, Olmat, Avas, Tripride, Bactoclav, Tenepride-M & Arbitel, Esomeprazole, Azithromycin, Simvastatin, Azelaic acid cream, etc..

RAW MATERIAL SECTION

Basic terminology used:

API (Active pharmaceutical ingredient) – biologically active Component of a drug product
[E.g.: Paracetamol]

- Excipient – acts as the binding agent [E.g.: lactose, Succinate, citrate]
- Solvents – E.g.: chloroform, methylene dichloride]
- Flavours – E.g.: peppermint, banana, vanilla
- Colours – E.g.: carnation pink, coated white
- Capsules – a solid oral dosage form [hard or soft gelatine]
- Pellets – granules of drug substances [E.g:Lansoprazole]

Receiving samples:

Generally, all the samples are imported by containers and for analyses it is made into the polybags [Individual samples, sub pooled samples, composite samples] and reaches the labs.

Analysing parameters:

All the parameters for a particular drug should be followed By the specification mentioned on:

- BP-British pharmacopeia
- IP-Indian pharmacopeia
- EP-European pharmacopeia
- USP-united states pharmacopeia

STABILITY:

Stability of the product is checked from raw material till the finished product. Shelf life of the product is also checked.

Analysis of

- Appearance (colour, shape, coating of tablet)
- Average weight
- Assay by HPLC
- Dissolution by HPLC
- Assay by UV
- Dissolution by UV

HPLC(High performance liquid chromatography):

- The separation principle of HPLC is based on the distribution of the analyte (sample) between a mobile phase (eluent) and a stationary phase (packing material of the column).
- Depending on the chemical structure of the analyte, the Molecules are retarded while passing the stationary phase.



PACKING:

Analysis of every materials used in packaging Packing can be classified into 3 categories:

- Primary (Foil)
- Secondary (cotton box , leaflets)
- Tertiary (Shippers)

CONCLUSION

My overall experience in internship program in microlab helped me to gain new things knowledge about the testing and manufacturing of the pharmaceutical products. The staffs were so helpful and thought about their overall working in the industrial gave an idea about how pharma related companies function and produce their product.

A STUDY ON THE MANUFACTURING OF TABLETS

Report on Internship Training submitted to Periyar university, Salem in partial fulfilment
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BACHELOR OF CHEMISTRY

Submitted by

NAME : NATHIYA. K

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Under the Supervision of

Mr.SIVAKUMAR

Microlab Pvt Ltd, Hosur.



DEPARTMENT OF CHEMISTRY

ST. JOSEPH'S COLLEGE OF ARTS AND SCIENCE FOR WOMEN, HOSUR

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PERIYAR UNIVERSITY


INTERNSHIP TRAINING REPORT

1.	Name of the Candidate	Nathiya. K
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4.	Name of the Department/Degree	Chemistry/ B.Sc Chemistry
5.	Name of the industry/ Institute in which for internship Training Undergone	Microlab Pvt Ltd, Hosur
6.	Guide / Supervisor under whom the training undertaken	Mr. Sivakumar
7.	Title of the Training	Manufacturing of tablets
8.	Brief output training (not more than 2 Pages)	Annexure Enclosed
9.	Conclusion	Production of medicines
10.	Outcome of the training	To ensure that the product is manufactured

Submitted for B.Sc., Internship Examination held on 14.11.2023 at the Department of Chemistry, St. Joseph's College of Arts and Science for Women, Hosur

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We wish him/her/them all success in their future endeavours.

For MICRO LABS LIMITED


Authorised Signatory



ABOUT THE COMPANY

Labs in 1973, he put in his whole hearted efforts towards ensuring its unprecedented growth, and following his footsteps, the organization has never looked back.

VISION

Our vision is to built around a desire to being not just the best, but a leader in the development, manufacture and sales of premium pharmaceutical products. We wish to raise the flag of Micro Labs in India as well as abroad. Micro Labs is dedicated to manufacturing medicine of the highest standard and market it at affordable prices across the globe.

ASPIRATION

To become an organization answering to the highest standards of professionalism, Micro Labs aspires to deliver value through high quality pharmaceutical products and build strong brands across therapy segments. This can be achieved through our scientifically supported segments and processes, with strong implementation capabilities.

RAW MATERIALS

A raw material, also known as a feedstock, unprocessed material, or primary commodity, is a basic material that is used to produce goods, finished goods, energy, or intermediate materials that are feedstock for future finished products.

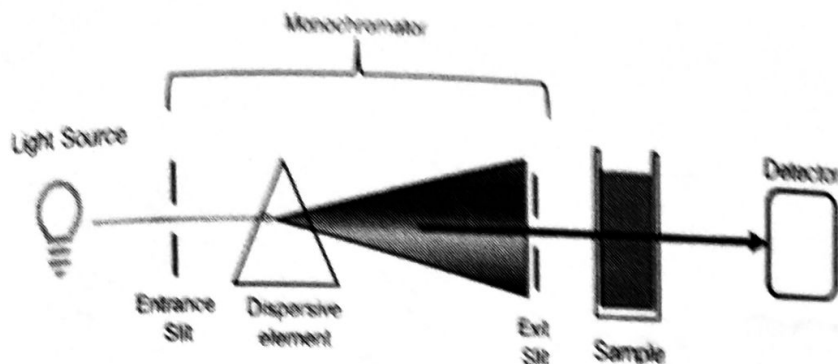
PARAMETERS

Identification:

- IR [infrared]
- NIR
- UV
- HPLC
- CHEMICAL TEST
- GC

1) Spectroscopy:

- Measures and interprets the electromagnetic spectra that
- result from the interaction between electromagnetic
- radiation and matter as a function of the wavelength



2) Chromatography:

Chromatography, technique for separating the components, or solutes, of a mixture on the basis of the relative amounts of each solute distributed between a moving fluid stream, called the mobile phase, and a contiguous stationary phase.

API

Micro Lab's API (Active Pharmaceutical Ingredient) Unit produces cutting-edge pharmaceutical products that adhere to global quality standards. APIs involving complex chemistries and innovative non-infringing processes are produced cost-effectively, enabling the organization to have competitive edge in the global market. This unit facilitates the robust production of APIs in therapeutic areas such as anti-hypertensive, diuretic, anti-malarial, anti-inflammatory and ophthalmology. The division has developed strong skills in identification of non-infringing routes backed with IPR [Intellectual Property Rights] cell and is supported by a well-equipped analytical department, thereby creating an 'IP capital' for the company.

DISINTEGRATION TEST

It involves the time required to break tablet components into Particles. It also involves 10 mesh and 40 mesh screen and time is measured while disintegrated particles pass through mesh Screen. There are two baskets A and B where basket A is below 18.5 Mm in length and basket B is above 18.5 mm in length.

FINISHED PRODUCT ANALYSIS

Finished products are those which have passed the different stages of testing and have completed all the manufacturing processes, they are divided into two parts depending on when they are sampled. They are: 1. Coated Uncoated 2. Powder Tablets, Capsules etc...

CONCLUSION

The internship in Micro Lab for 2 weeks went so good and valuable, I learnt about some of the pharmaceutical methods which will be a path way for my future studies in pharma field. Though the staffs were busy they clear the doubt whenever we raised questions. We Learned the different facets of working within the labs. I would like to thank the staffs and the HR of the department who is the path for our allowance for the internship.

A Study on the Manufacturing of TABLETS

Reports on Internship Training submitted to Periyar university, Salem in partial fulfilment

Of requirement for the award of the degree of

BACHELOR OF CHEMISTRY

Submitted by

NAME : ROSHINI.M

REG NO : C21UG152CHE030

Under the Supervision of

Mr.Sivakumar

Micro Labs Ltd, Hosur.



DEPARTMENT OF CHEMISTRY

ST.JOSEPH'S COLLEGE OF ARTS AND SCIENCE FOR WOMEN, HOSUR

(Affiliated to Periyar University, Salem)



PERIYAR UNIVERSITY

INTERNSHIP TRAINING REPORT

1	Name of the candidate	Roshini.M
2	University Examination Registration Number	C21UG152CHE030
3	Name of the college	St.Joseph's college of arts and science for women, Hosur
4	Name of the Department / Degree	B.sc., Chemistry
5	Name of the Industry / Institute in which for internship Training Undergone	Micro Labs Ltd, Hosur
6	Guide / Supervisor under whom the training undertaken	Mr. Sivakumar
7	Title of Training	Manufacturing of Tablets
8	Brief output training (Not more than 2 pages)	Annexure enclosed
9	Conclusion	Production of Medicine
10	Outcome of the training	To ensure that the product is manufactured.

Submitted for B.Sc., Internship Examination held on 14.11.2023 at the Department of
Chemistry, St.Joseph's college of arts and science for Women, Hosur.

Roshini.M
Signature of the
Student

S.V. Thangaraj
Signature of the
Guide

S.V. Thangaraj
Head of the
Department

[Signature]
PRINCIPAL
ST. JOSEPH'S COLLEGE OF ARTS
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Mookandapalli, Sipcot,
HOSUR - 635 126, Krishnagiri - Dist.

Examiner:

1

2



MICRO LABS LIMITED

92, SIPCOT INDUSTRIAL COMPLEX, HOSUR - 635 126 (T.N.)
Tel.: +91-4344-270818, 277937 Fax: +91-4344-277261

Date: 06/02/2023

STUDENT INTERNSHIP COMPLETION CERTIFICATE

This is to certify that Mr./Ms. ✓ ROSHINI.M, (C21UG152CHE030)

I / II / III / IV year student/students of B. Pharm. / M. Pharm. / B. Sc., / M.Sc., Chemistry / Bio
Chemistry / Bio Technology / Micro Biology / MBA/MSW from St. Joseph's
College of Arts And Science for women
College - Affiliated to Periyar University has/have successfully
completed Internship Training / Project work from 24/01/2023 to 06/02/2023.

We wish him/her/them all success in their future endeavours.

For MICRO LABS LIMITED


Authorised Signatory



ABOUT THE COMPANY

Micro Labs Limited is a multi-faceted healthcare organization established in 1973 by G.C.Surana. Micro Labs is dedicated to manufacturing of Tablets, Capsules, Ointments and API's (Active Product Ingredients) at the highest standard and marketing it at affordable prices across the globe.

VISION OF THE COMPANY

To become a leader in the development, manufacture and sales of premium pharmaceutical products and come under top 10 pharmaceutical companies.

QUALITY CONTROL

Quality control is checked in three different stages :

- ♦ Raw material analysis
- ♦ In process sample analysis
- ♦ Finished product

QC deals with the system which accepts or rejects any activities or parameters which affects the quality of the medicines and thus ensures good quality of the products.

- Quality control has various division namely ;

Microbio Lab, Raw material section, Stability lab,

Process validation , Packing material analysis.

PROCESS EVALUATION

There are certain process physical parameters should be evaluated and optimized such as appearance test, average weight test, uniformity test etc...

DEFINITION OF IPQC

IPQC stands for In process Quality control. These are checks that are carried out the manufacturing process is completed. The function of the in process controls is monitoring . In process materials should be tested for identity, strength, quality, and purity as appropriate and approved or rejected by the quality control unit during the production process. While the Rejection in-process materials should be identified and controlled under quarantine system.

PURPOSE

- ❖ To ensure detectable and significant human errors.
- ❖ Abnormal interpretation
- ❖ Adoption of given procedures

IPOC TEST

These are tests performed between QA and Qc and provides for the authorization of approved raw materials for manufacturing based on laboratory testing generally called as IPQCs such as Physical, Chemical, Microbiologic and Biologic tests

PROCESS VALIDATION

"Process validation is a documented program which provides a higher degree of assurance that a specific process will produce a product meeting its predetermined specifications & quality attributes. "The basic principles of quality assurance have as their goal the production of products that are fit for their intended use".

Approach to Process Validation

There are three stages of processes validation

Stage 1 - Process Design: The commercial manufacturing process is defined during this stage based on knowledge gained through development and scale-up activities.

Stage 2 - Process Qualification: During this stage, the process design is evaluated to determine if the process is capable of reproducible commercial manufacturing.

Stage 3 - Continued Process Verification: Ongoing assurance is gained during routine production that the process remains in a state of control.

TYPES OF VALIDATION

- Prospective Validation
- Concurrent Validation
- Revalidation
- Retrospective Validation

PHASES OF VALIDATION

- Design Qualification (DQ)
- Documented verification of the design of equipment and manufacturing facilities. Operational Qualification (OQ) documented verification of equipment or system performance in the target operating range.
- Process Performance Qualification (PQ) Documented verification that equipment or systems operate as expected under routine production conditions. The operation is reproducible, reliable and in a state of control.

CONCLUSION

It was really a good and learnable experience as a intern on microlab . They were many mentors to guide and to teach us and with the help of them I can learn some knowledge . I hope it will help with my future works . As a UG student I can't understand many procedures but the staffs there guided me and it was all a wonderful and knowledge gainable time.

And I would thank each and every staffs for spending there valuable time for guiding us
And a special thanks to the HR of the microlab who allowed us to do our internship and for the knowledge he gave us.