



ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ  
**Khalsa College of Pharmacy**

Ph: 0183-2450215

G.T. Road, Amritsar 143002

Estd. 2009

e-mail: khalsacop.asr2009@gmail.com

Web: www.khalsacollegepharmacy.org

Approved by AICTE, PCI, New Delhi & Punjab Govt. Affiliated to PTU, Kapurthala, PSBTE & IT, Chandigarh

1.3.2 Percentage of students undertaking project work/field work/internship (Data for the latest completed academic year)

Programme name	Program Code	List of students undertaking project work/field work/internship
B. Pharmacy Semester VIII(Project work)	B. Pharm	Abhay Chawla
		Abhay Dhawan
		Akashdeep Singh
		Akshit Gill
		Amandeep Kaur
		Ankush
		Arshdeep Singh
		Asees Pal Singh
		Avneet Singh
		Bhagwant Singh
		Bhannu Vashista
		Davinder Singh
		Diya Mehra
		Gaurav Thakur
		Gautam
		Gavin Gaurav Raj
		Guddu Kumar
		Gurmanpreet Kaur
		Gursimran Kaur
		Harkirat Singh
		Harpal Singh Sachdeva
		Jagtar Singh
		Jashandeep Singh
		Jasleen Kaur
		Karanbir Singh Hundal
		Khushleen Kaur
		Lakshay Suri
		Lovepreet Singh
Lovepreet Singh		
Manish Singh		
Manpreet Singh		
Mohammad sohrab		
Mohit Kumar		
Mohit Sharma		







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		Muskan Bedi
		Nikhil Wahi
		Piyush
		Pritpal Kaur Malhi
		Rishab Arora
		Ritesh Bhanot
		Ritesh Bajaj
		Robinpreet Kaur
		Rohit Kumar
		Shivam
		Shubham Guleria
		Simran Kaur
		Sukhmanpreet Singh
		Suryanshu
		Varun Mahajan
		Vishal
		Gazal
		Jasmine Kaur
		Malika Sharma
		Samiksha Devi
		Sandeep Kaur
		Sandeep Kaur
		Sarvpreet Singh
M.Pharm Sem IV (Research work)	M.Pharm	Naman Sethi
		Abhay Sharma
		Akshay Kumar
		Aman Sharma
		Aniket Malia
		Komal
		Nitish Khajuria
		Priyanka
		Saharsh Khanna
		Diksha Kumari
		Karan Dev
		Nitika Choudhary
		Radhika
		Sonali Gupta
B.Pharm Sem VI (Industrial Training)	B.Pharm	Aarushi Gautam
		Abhey Sharma







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	Abhishek Sharma
	Akashdeep Singh
	Akash Sharma
	Amandeep
	Amandeep Singh
	Amrin Kaur
	Amritpal Singh
	Anmoldeep Singh
	Anmolpreet Singh
	Arshdeep Singh
	Dilpreet Singh
	Geetam Mittal
	Gourav Sharma
	Gurwinder Singh
	Harmanjit Singh
	Harmanpreet Singh
	Harshit Luthra
	Jagmehakdeep Singh
	Jashanpreet Singh
	Jaswinder Singh
	Jatin Dutti
	Jobanpreet Singh Sodhi
	Kanishka
	Kartik Vinayak
	Kunal Gupta
	Manav
	Maninder Singh
	Manmeet Singh
	Mohit Kumar
	Neeraj Kumar
	Nikita
	Nitantika
Parampreet Kaur	
Parth Dheer	
Prabhnoor Kaur	
Priyanshu Mahajan	
Purushottam Kumar	
Rajveer Singh	
Rasamrit Kaur	





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		Ronit Seth
		Sahil Sharma
		Sakshi Mehta
		Samridhi Dogra
		Savneet Kaur Gill
		Shivani
		Shivraj Singh
		Simranpreet Kaur
		Tanish Dhir
		Arshdeep Kaur
		Gagandeep Singh
		Gurbir Singh
		Harpreet Kaur
		Hitesh Chandok
		Manroop Singh
		Prabhjot Kaur
		Rishabh Mehta
		Sudhanshu
B.Pharm Sem IV (Industrial Visit) (Ramson Remedies, Amritsar)	B.Pharm	Aashima
		Abhineet Ladoiya
		Akashdeep Singh KS
		Akashdeep Singh LS
		Ankit Kumar
		Ankuj Kumar
		Anshika
		Ashnoor Kaur
		Ashutosh Gautam
		Avneet Kaur
		Ayush Behal
		Chaitanya Mehra
		Damanpreet Singh
		Geetanjali Sharma
		Gurlivleen Kaur
		Gurmukh Singh
		Harchit Kaur
		Hardik Arora
		Hari Singh
		Harpritam Singh





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		Hunarpreet Kaur
		Inderjit Pradhan
		Jaskaran Singh
		Jaspal Singh
		Karan Bedi
		Kartik Gupta
		Komalpreet Kaur AS
		Komalpreet Kaur
		Manbir Kaur
		Manik Sareen
		Manik Sharma
		Maninder Kaur
		Manmeet Kaur
		Manmohan Singh
		Mansi Thakur
		Mehrab Kaur Sandhu
		Muskan
		Navpreet Singh
		Pardeep Singh
		Prabhjot Kaur
		Priynka Tura
		Rajbir Singh
		Raunak Tiwari
		Rayan Bhardwaj
		Rhythm Mahajan
		Sahil Shingari
		Sanchi Mahajan
		Savreen Kaur
		Shobit Gupta
		Sukhmanpreet Kaur
		Sukhmeet Singh Ahuja
		Tanisha
		Tanu Ashmeet Kaur
		Tushar Saroop
		Varun Bawa
		Vivek
		Nikhil
		Muskan
		Sunmeet Singh







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		Bhavesh
		Jivtesh
B.Pharm Sem I(Field Work on Collection of Packaging materials used in Pharmaceutical dosage forms)	B.Pharm	Aasbir Kaur
		Abhijeet Singh
		Abhikaran Singh Walleh
		Abhishek Sharma
		Afreen Zafar
		Agamdeep Singh
		Akashdeep Singh
		Anjali
		Ankush Kumar
		Anmol Singh
		Avtar Singh
		Balwant Singh
		Daljeet Singh
		Garvit Chander Choudhary
		Gurpreet Kaur
		Harjot Singh Saini
		Harsh Bawa
		Harshdeep Singh
		Harshpreet Singh
		Himangi
		Jagnamay Kohli
		Jaismeen Kaur
		Jasbinder Singh Gill
		Jasmeen Kaur
		Jitesh Sharma
		Kavish Sharma
		Kiranjit Kaur
		Manav Kumar
		Manraj Singh
		Mohneet Kaur
		Naaz Kaura
		Navneet Kaur
		Nikhil Kakkar
Parampreet Singh		
Paras Sharma		
Parul		
Parbhat Kumar Chaudhary		
Rabia Deol		
Rahul Mahajan		







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		Ridhima Sharma
		Rishap
		Ritik Sharma
		Sachin Sharma
		Sahajpal Singh
		Sarthak Mahajan
		Shine Sharma
		Shivam Abrol
		Shivangi
		Simran Rout
		Simranjeet Kaur
		Sourav Sharma
		Supreet Kaur
		Surinder Singh
		Syed Ariquat Andrabi
		Syed Tahreen Faiza
		Vasu Dev
B.Sc MLS Sem-5 (PROJECT WORK)	B.Sc MLS	Aishwanpreet singh
		Aksha
		Amandeep Singh
		Amarjot Singh
		Arpandeeep singh
		Baljinder Singh
		Bobby Singh
		Dilpreet Singh
		Eknoordeep singh
		Gurinder katru
		Harmandeep kaur
		Harmandeep Singh
		Husanpreet singh
		Jaipreet jawanda
		Jannat bhagat
		Jashandeep Kaur
		Jasmeen kaur
		karandeep Singh
		Kawalpreet Kaur
		Komalpreet Kaur
		Mahima
		Manbin Kaur
		Manpreet Kaur JS
		Manpreet Kaur GS







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		Manpreet Singh
		Manseerat Kaur
		Meghna grover
		Muskan
		Namrata
		Navpreet singh
		Noor
		Pahuldeep kaur
		Parneet randhawa
		Pawanpreet
		Prabhjeet Kaur
		Prerna
		Rajveer Singh
		Ramanjot Kaur
		Ramanpreet Kaur
		Ramesh kumar
		Rohit Sharma
		Sanjampreet Kaur
		Sanjana
		Simranjeet Kaur
		Vishaldeep Singh
		Yashpreet kaur
		Aditya
		Anureet
		Arun
		Harjot
		Harkanwar
		Jaskirat
		Mani masih
		Manpreet JS
		Manpreet MS
		Navpreet
		Nidhi
		Prabhdeep
		Sandeep kaur
		Sandeep singh
		Shivam
		Simrandeep
		Vishaldeep
		Irvandeep Kaur
		Aarti
	B.Sc MLS	







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B.Sc MLS Sem-4  
(HOSPITAL/CLINICAL  
LABORATORY VISIT)



Aayusha Rani
Aditi Sharma
Amanpreet
Armanpreet Singh
Bhagwant Singh
Charanjeet
Diljit Singh
Farhan
Gurdeep Kaur
Gurkirpal Singh
Gurmanjot Singh
Gurpartap Singh
Gursahib Singh
Harmeet Kaur
Jasmeet Kaur GS
Jasmeet Kaur SS
Jaswinder Singh
Jatin Baboria
Karan Singh
Karanbir Singh
Kashish
Khushmanbir Kaur
Khushpreet Kaur
Lalit Kumar
Lovepreet Singh
Malkeet Singh
Manpreet Kaur
Mohit Sharma
Muskaan Mattu
Onkar Singh
Parmeet Kaur
Parveen Kaur
Pawandeep Kaur
Prabhjot Kaur
Rahul
Ramandeep Kaur
Ramanpreet Kaur
Ratinderbir Kaur
Rohit
Sanpreet Kaur
Sarojdeep Kaur





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		Sheweta Thakur
		Simarjeet Singh
		Simran
		Sukhmandeep Kaur
		Tanveer Kaur
		Akanksha
		Ashish
		Darpan
		Ekampreet
		Hritik
		Laxmi
		Samiksha
		Sarabraj
		Shubhdeep
		Sania
		Sukhmanpreet
		Akashdeep singh
		Amrit singh
		Ankit
		Ankita
		Anmol Kaur
		Balister
		Chandandeep singh
		Deepshikha
		Dinesh badgal
		Divanshi
		Gurleen kaur
		Gurpreet singh
		Honey
		Jagroop Singh
		Jaskaran singh
		Jasleen kaur
		Kamal krishan
		Kamini
		Karan sharma
		Karandeep Singh
		Kirti
		Komalpreet MS
		Komalpreet JS
		Krishna
		Lovedeep singh
B.Sc MLS Sem-2 (FIELD WORK ON CLINICAL SURVEY)	B.Sc MLS	







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		Manjot kaur
		Manmeet kaur
		Manpreet Kaur
		Mansi
		Muhamad Arshad
		Neeraj
		Palkdeep
		Paramjit Singh
		Rajwant kaur
		Rajwant kaur SS
		Rajwant kaur BS
		Randheer singh
		Ravinder singh
		Ritik
		Sachin maurya
		Sanjay singh
		Saresht kumar
		Shaina
		Simarjeet kaur
		Simranjeet kaur
		Snehpreet kaur
		Sukhmanpreet
		Syed bais ali andrabi
		Vanshika
M.Sc MLS Sem 4 ( DISSERTATION WORK)	M.Sc MLS	Gomti Bala
		Karanbir Singh
		Manraj Singh
		Poonamdeep Kaur





**KHALSA COLLEGE OF PHARMACY, AMRITSAR**  
**B.PHARMACY VIII SEMESTER (2019-2023)**

The following students of B.Pharm semester VIII of batch 2019-2023 have completed their project work:

Sr. No.	Reg. No.	Name of Student	Supervisor Name	Title of project work
1.	1912460	Abhay Chawla	Mr. Lovepreet Singh	A Detailed Review on Marketed Formulation of Paracetamol
2.	1912461	Abhay Dhawan	Dr. Gurjeet Singh	Preparation and Characterization of Transferosomes Based Topical Formulation for Effective Delivery of Curcumin Review on Drug Delivery
3.	1912462	Akashdeep Singh	Dr. Prince Ahad Mir	"Honey As An Antioxidant Agent" An Comprehensive Review
4.	1912463	Akshit Gill	Mr. Lovepreet Singh	Review on Drug Delivery Application of Ethosomes
5.	1912465	Amandeep Kaur	Dr. Prabhsimran Singh	Formulation and Evaluation of Sustained Released Tablet
6.	1912468	Ankush	Dr. Satinder Kaur	To Examine the Effect of Herbal Oil Against Biochemical Alteration in Alzheimer Induced Rats Using Aluminum Chloride
7.	1912469	Arshdeep Singh	Mr. Nishant Kumar	Analysis of Timolol Maleate
8.	1912470	Asees Pal Singh	Ms. Apoorva Chawla	Alzheimer's Disease
9.	1912471	Avneet Singh	Dr. Rajiv Kumar	Solubility Enhancement of Aceclofenac By Solid
10.	1912472	Bhagwant Singh	Dr. Amandeep Bhatia	Development of Pharmacognostic Profile of Alstonia Scholaris Leaves
11.	1912473	Bhannu Vashista	Dr. Sandeep Rahar	Synthesis, Characterization & Biological Evaluation of Newer Analogues of 2,5-Disubstituted-1,3,4-Oxidiazole
12.	1912474	Davinder Singh	Mrs. Parminderjit Kaur	Recent Advancement for Formulation Development of Effervescent Tablets
13.	1912475	Diya Mehra	Dr. Tajpreet Kaur	Invitro Antiplatelet Activity of Allium cepa
14.	1912476	Gaurav Thakur	Dr. Prince Ahad Mir	Ethomedicinal use, Phytochemistry and Pharmacological Aspects of Genus Calendula
15.	1912477	Gautam	Mr. Anmol Dogra	A Detailed Review on Intranasal Placebo Nanoparticles Against Alzheimer's Disease
16.	1912478	Gavin Gaurav Raj	Dr. Sandeep Rahar	Synthesis, Characterization & Biological Evaluation of Novel Oxidiazole Derivatives As

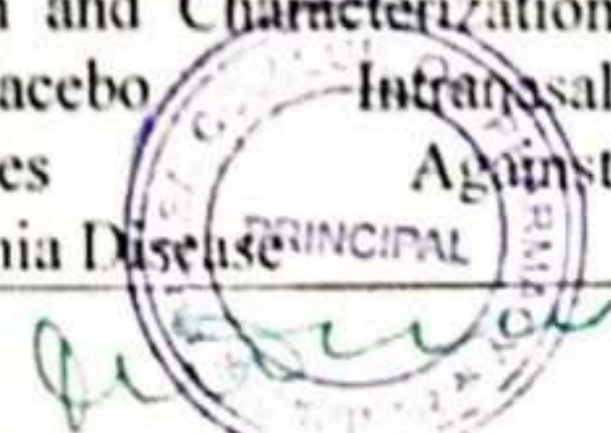




				Possible Antimicrobial, Antioxidant and Anticonvulsant Agents
17.	1912479	Guddu Kumar	Mr. Nishant Kumar	To Study the Dissolution Profile of Aceclofenac Sustained Release 200 MG Tablets of Different Brandes
18.	1912480	Gurmanpreet Kaur	Dr Kavita	Quantitative-Structural Activity Relationship(QSAR) In Toxicity Testing
19.	1912481	Gursimran Kaur	Dr. Jasjeet Kaur Narang	Formulation and Evaluation of Submicron Emulsion for the Treatment of Psoriasis
20.	1912482	Harkirat Singh	Dr. Tajpreet Kaur	Determination of Anthelmintic Acivity of Trachyspermum Ammi Seeds Extract on Pheretima Posthuma
21.	1912483	Harpal Singh Sachdeva	Dr. Amandeep Singh Bhatia	Phytochemical Screening of Herbal Drug
22.	1912484	Jagtar Singh	Ms. Apoorva Chawla	Role of Alkaloides and Flavanoids Phytoconstituents in the Treatment of Neurodegenerative Disorders
23.	1912485	Jashandeep Singh	Mr. Rajan Salwan	Standardization Parameters & Antioxidant Activity of Citrus Lemon
24.	1912486	Jasleen Kaur	Dr. Kavita Bhagat	Docking Studies of Phytoconstituents of Colove Oil As COVID 19 Main Protease Inhibitor
25.	1912488	Karanbir Singh Hundal	Dr. Lakhvir Kaur	Solubility Enhancement of Curcumin By Solid Dispersion
26.	1912489	Khushleen Kaur	Dr. Kamaldeep Kaur	Implication of Role of PGC-1 $\alpha$ As A Potential Biomarker of Mitochondrial Funtion in Type-2 Diabetes Mellitus
27.	1912490	Lakshay Suri	Dr. Satinder Kaur	To Evaluate the Neuroprotective Effect of Plant Volatile Oil Against Aluminum Chloride Induced Behavioral Impairment in Rats
28.	1912491	Lovepreet Singh	Mr. Rajan Salwan	Diabetics Neuropathy-A Review
29.	1912492	Lovepreet Singh(I.S)	Ms. Apoorva Chawla	To Study Various Sinnalling Patways Involved in Cancer
30.	1912494	Manish Singh	Ms. Anureet Kaur	To Carru Out Comparative Analysis of Predinosolone 5mg of Different Brands
31.	1912495	Manpreet Singh	Mre. Parminderjit Kaur	Comparative Analysis of Different Marketed Brands of Piroxicam Tablet By In-Vitro Techniques
32.	1912496	Mohammad sohrab	Ms. Apoorva Chawla	Formulation & Optimization of Paracetamol Tablet & Its Comparison Using Different Brands of Paracetamol
33.	1912498	Mohit Kumar	Nishant Kumar	"Identification of Phases of Various Oil, Surfactant /Co-surfactanta & Water System Using



				Ternary/Pseudoternary Phase Diagram"
34.	1912499	Mohit Sharma	Ms Manjeet Kaur	Review on Thiazole and its Biological Activity
35.	1912500	Muskan Bedi	Ms Manjeet Kaur	Review on Thiazole & Its Biological Activity
36.	1912502	Nikhil Wahi	Dr. Jasjeet Kaur Narang	Formulation and Evaluation of Aripiprazole loaded lipid carrier for the treatment of schizophrenia
37.	1912503	Piyush	Mrs. Parminderjit Kaur	Comparative Analysis of Different Marketed Brands of Allopurinol By In-Vitro Techniques
38.	1912504	Pritpal Kaur Malhi	Dr, Lakhvir Kaur	Development of Ethosomes Based Nanoethogel Formulation of Bexarotene for Treatment of Cancer
39.	1912505	Rishab Arora	Mrs. Jasreen Uppal	Synthesis of 2-AMINO-6-Alkyl/Aryl-5-OXO-4-Substituted Phenyl-5,6-Dihydro-4H-Pyrano{3,2-C} Quinoline-3-Carbonitriles
40.	1912507	Ritesh Bhanot	Dr Rjiv Kumar	Solubility Enhancement of Ketotifen By Solid Dispersion
41.	1912508	Ritesh Bajaj	Dr. Amandeep Singh Bhatia	Isolation and Phytochemical Reference Standard from the Lawsonia inermis
42.	1912509	Robinpreet Kaur	Dr. Kavita Bhagat	Novel 4-Thiazolidinone Derivatives As Alpha amylase Inhibitory Activity: Synthesis, Characterization and Biological Evaluation
43.	1912510	Rohit Kumar	Dr. Prince Ahad Mir	Development & Characterization of Carrier Based Formulation of Antifungal Agent
44.	1912512	Shivam	Dr. Tajpreet Kaur	In vitro Anthelmintic Activity of Allium cepa of <i>Pheretima posthuma</i>
45.	1912513	Shubham Guleria	Ms. Manjeet Kaur	Evaluation of Pharmaceutical Equivalence of Different Brands Diclofenac Sodium Tablets
46.	1912514	Simran Kaur	Mr. Gurpreet Singh	Determination of Antibiotic Residues in Milk
47.	1912515	Sukhmanpreet Singh	Dr. Varinder Soni	Qualification & Quantification of Bisphenol A in Drinking Water
48.	1912516	Suryanshu	Mr. Rajan Salwan	Evaluation of Pharmaceutical Equivalence of Two Different Brands of Glimperide Tablets
49.	1912518	Varun Mahajan	Dr. Jasreen Uppal	Synthesis and Spectral Analysis of the Newly Synthesized Schiff Base of Antitubercular Drugs
50.	1912519	Vishal	Ms. Anureet Kaur	Review on Pyridine and Its Biological Activities
51.	2015769	Gazal	Mr. Anmol Dogra	Formulation and Characterization of Placebo Intra-nasal Nanoparticles Against Schizophrenia Disease





**FORMULATION AND EVALUATION OF SUBMICRON  
EMULSION FOR THE TREATMENT OF PSORIASIS**

**A**

**PROJECT REPORT**

**SUBMITTED TO**

**IKG PUNJAB TECHNICAL UNIVERSITY**

**JALANDHAR (INDIA)**

**IN THE PARTIAL FULFILLMENT OF THE REQUIREMENTS**

**FOR THE DEGREE OF**

**BACHELOR OF PHARMACY**



**SUBMITTED BY**

**GURSIMRAN KAUR**

**(Regd. No. 1912481)**

**SUPERVISOR**

**Dr. JASJEET KAUR NARANG**

*Jasjeet Kaur Narang*  
KHALSA COLLEGE OF PHARMACY  
AMRITSAR

**KHALSA COLLEGE OF PHARMACY**

**AMRITSAR (PUNJAB)**

**2023**



**FORMULATION AND EVALUATION OF  
ARIPIPRAZOLE LOADED LIPID CARRIER FOR  
TREATMENT OF SCHIZOPHRENIA**

**A**

**PROJECT REPORT**

**SUBMITTED TO**

**IKG PUNJAB TECHNICAL UNIVERSITY**

**JALANDHAR (INDIA)**

**IN PARTIAL FULFILMENT OF THE REQUIREMENTS**

**FOR THE DEGREE OF**

**BACHELORS OF PHARMACY**



**SUBMITTED BY**

**NIKHIL WAHI**

**(Regd. No. 1912502)**

**SUPERVISOR**

**DR. JASJEET KAUR NARANG**

**KHALSA COLLEGE OF PHARMACY**

**AMRITSAR (PUNJAB)**

**2023**

*Nikhil Wah*  
KHALSA COLLEGE OF PHARMACY  
AMRITSAR



## KHALSA COLLEGE OF PHARMACY, AMRITSAR

### B.PHARMACY VI SEMESTER (2020-2024)

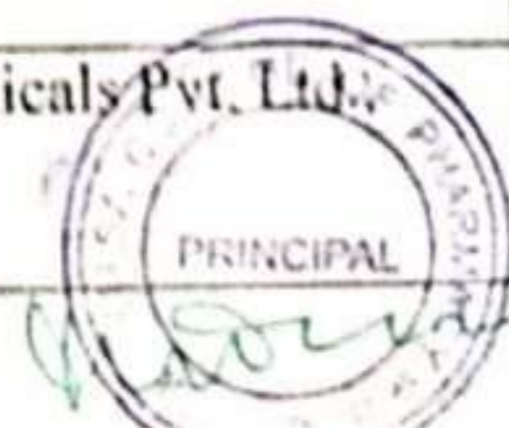
The following students of B.Pharmacy Semester VI of batch 2020-2024 have completed their industrial training:

Sr. No.	Reg. No.	Name of Student	Name of Industry
1.	2015689	Aarushi Gautam	Systacare Remedies, Amritsar
2.	2015690	Abhey Sharma	Jackson Laboratories, Amritsar
3.	2015691	Abhishek Sharma	Swiss Garnier Biotech Pvt. Ltd., Mehatpur
4.	2015692	Akashdeep Singh	Jackson Laboratories, Amritsar
5.	2015693	Akash Sharma	Jackson Laboratories, Amritsar
6.	2015694	Amandeep	Trimedix Pharma Pvt. Ltd, Mohali
7.	2015696	Amandeep Singh	Jackson Laboratories, Amritsar
8.	2015698	Amrin Kaur	Jackson Laboratories, Amritsar
9.	2015699	Amritpal Singh	Jackson Laboratories, Amritsar
10.	2015700	Anmoldeep Singh	Jackson Laboratories, Amritsar
11.	2015701	Anmolpreet Singh	Jackson Laboratories, Amritsar
12.	2015703	Arshdeep Singh	Willmark Pharmaceuticals Pvt. Ltd., Amritsar
13.	2015704	Dilpreet Singh	Jackson Laboratories, Amritsar
14.	2015706	Geetam Mittal	Jackson Laboratories, Amritsar
15.	2015707	Gourav Sharma	Jackson Laboratories, Amritsar
16.	2015709	Gurwinder Singh	Jackson Laboratories, Amritsar
17.	2015710	Harmanjit Singh	Jackson Laboratories, Amritsar
18.	2015712	Harmanpreet Singh	Jackson Laboratories, Amritsar
19.	2015713	Harshit Luthra	Jackson Laboratories, Amritsar
20.	2015714	Jagmehakdeep Singh	Jackson Laboratories, Amritsar
21.	2015715	Jashanpreet Singh	Jackson Laboratories, Amritsar
22.	2015716	Jaswinder Singh	Jackson Laboratories, Amritsar





23.	2015717	Jatin Dutt	Jackson Laboratories, Amritsar
24.	2015718	Jobanpreet Singh Sodhi	Jackson Laboratories, Amritsar
25.	2015719	Kanishka	Kwality Pharmaceuticals, Amritsar
26.	2015721	Kartik Vinayak	Kwality Pharmaceuticals, Amritsar
27.	2015723	Kunal Gupta	Jackson Laboratories, Amritsar
28.	2015725	Manav	Willmark Pharmaceuticals Pvt. Ltd., Amritsar
29.	2015726	Maninder Singh	Jackson Laboratories, Amritsar
30.	2015727	Manmeet Singh	Jackson Laboratories, Amritsar
31.	2015728	Mohit Kumar	Jackson Laboratories, Amritsar
32.	2015729	Neeraj Kumar	Jackson Laboratories, Amritsar
33.	2015730	Nikita	Jackson Laboratories, Amritsar
34.	2015731	Nitantika	Glenmark Pharmaceuticals, Baddi
35.	2015732	Parampreet Kaur	R.P. Biotech, Pvt. Ltd., Batala
36.	2015733	Parth Dheer	Jackson Laboratories, Amritsar
37.	2015734	Prabhnoor Kaur	Jackson Laboratories, Amritsar
38.	2015735	Priyanshu Mahajan	Jackson Laboratories, Amritsar
39.	2015736	Purushottam Kumar	Kwality Pharmaceuticals, Amritsar
40.	2015737	Rajveer Singh	Jackson Laboratories, Amritsar
41.	2015738	Rasamrit Kaur	Emmwell Pharmaceuticals Pvt. Ltd.
42.	2015740	Ronit Seth	Jackson Laboratories, Amritsar
43.	2015741	Sahil Sharma	Jackson Laboratories, Amritsar
44.	2015743	Sakshi Mehta	Jackson Laboratories, Amritsar
45.	2015744	Samridhi Dogra	Jackson Laboratories, Amritsar
46.	2015745	Savneet Kaur Gill	Systacare Remedies
47.	2015748	Shivani	Kwality Pharmaceuticals, Amritsar
48.	2015749	Shivraj Singh	Willmark Pharmaceuticals Pvt. Ltd., Amritsar





49.	2015750	Simranpreet Kaur	Jackson Laboratories,Amritsar
50.	2015751	Tanish Dhir	Jackson Laboratories,Amritsar
51.	2117099	Arshdeep Kaur	Jackson Laboratories,Amritsar
52.	2117100	Gagandeep Singh	Jackson Laboratories,Amritsar
53.	2117101	Gurbir Singh	Jackson Laboratories,Amritsar
54.	2117102	Harpreet Kaur	Jackson Laboratories,Amritsar
55.	2117103	Hitesh Chandok	Jackson Laboratories,Amritsar
56.	2117104	Manroop Singh	Jackson Laboratories,Amritsar
57.	2117106	Prabhjot Kaur	Jackson Laboratories,Amritsar
58.	2117107	Rishabh Mehta	Jackson Laboratories,Amritsar
59.	2117108	Sudhanshu	Jackson Laboratories,Amritsar







LABORATORIES PVT. LTD.  
(AN ISO 9001:2015 CERTIFIED COMPANY)

Ref.No. : JLPL/QC/805/2023-2024

Date: 18/08/2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Amritpal Singh S/o S. Surjan Singh student of B. Pharmacy 6<sup>th</sup> semester bearing Roll. No. 2015699 from Khalsa College of Pharmacy, Amritsar has completed his industrial training in our Quality Control Department from 19<sup>th</sup> June 2023 to 18<sup>th</sup> July 2023. During this period he found sincere and hardworking. We wish him best of luck for his bright future.

For Jackson Laboratories Pvt. Ltd

*Raminder Kaur*  
Jackson Laboratories Pvt.Ltd.

QUALITY CONTROL MANAGER  
RAMINDER KAUR  
Quality Control Manager

*Raminder Kaur*

PRINCIPAL  
KHALSA COLLEGE OF PHARMACY  
AMRITSAR



22-24, Majitha Road Bye Pass, AMRITSAR - 143001 INDIA  
Cell : +91 9872891817, 9815091817  
E-mail : info@jacksonlaboratories.com / raajjackson@gmail.com  
Website : www.jacksonlaborataries.com





GST NO : 03AAACW2173M1ZB

Majitha Road, Bye Pass Chowk,  
P.O. Khanna Nagar Amritsar-143 004 (Punjab) INDIA  
Tel.: (Off.) 0183-2421729, 2421233 Fax : 0183-2421729  
E-mail: willmakpharma@gmail.com



**WILLMARK**  
PHARMACEUTICALS PVT. LTD.  
An ISO 9001:2015 Certified Company

Ref. No. ....

Dated 1/8/23

### EXPERIENCE CERTIFICATE

This is to Certify that Manav S/o Sh. Sanjeev Kumar student of B. Pharmacy in 6<sup>th</sup> semester of Khalsa College of Pharmacy, Amritsar, has been given Industrial training as a trainee in our Organization. He has completed One month training Program w.e.f 15 June 2023 to 15 July 2023 in the manufacturing of medicines and have learnt various ways/ art of manufacturing medicine .

We wish him success in life

For Willmark Pharmaceuticals Pvt Ltd.

  
Manager



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AMRITSAR





ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ  
**Khalsa College of Pharmacy**  
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Ph. 0183-2450215

Estd 2009

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Web: www.khalsacollegepharmacy.org

Approved by AICTE, PCI, New Delhi & Punjab Govt. Affiliated to PTU, Kapurthala, PSBTE & IT, Chandigarh

Date: 14.10.2022

### Circular

This is for the information of students of B. pharmacy I Semester that they have to submit the field work report related to collection of packaging materials used in Pharmaceutical dosage forms to their class incharge on or before 11 November 2022.

  
Director-Principal  
Dr. R.K. Dhanwan



## KHALSA COLLEGE OF PHARMACY, AMRITSAR

### B.PHARMACY I SEMESTER (2022-2026)

The following students of B.Pharm sem I of 2022-2026 batch have completed their field visit related to collection of packaging material used in Pharmaceutical dosage forms:

Sr. No.	Reg. No.	Name of Student
1	2216795	Aasbir Kaur
2	2216796	Abhijeet Singh
3	2216797	Abhikaran Singh
4	2216799	Abhishek Sharma
5	2216800	Afreen Zafar
6	2216801	Agamdeep Singh
7	2216802	Akashdeep Singh
8	2216804	Anjali
9	2216805	Ankush Kumar
10	2216806	Anmol Singh
11	2216807	Avtar Singh
12	2216808	Balwant Singh
13	2216809	Daljeet Singh
14	2216810	Garvit Chander
15	2216812	Gurpreet Kaur
16	2216813	Harjot Singh Saini
17	2216815	Harsh Bawa
18	2216816	Harshdeep Singh
19	2216817	Harshpreet Singh
20	2216818	Himangi
21	2216819	Jagnamay Kohli

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22	2216820	Jaismeen Kaur
23	2216821	Jasbinder Singh Gill
24	2216823	Jasmeen Kaur
25	2216824	Jitesh Sharma
26	2216825	Kavish Sharma
27	2216826	Kiranjit Kaur
28	2216828	Manav Kumar
29	2216830	Manraj Singh
30	2216831	Mohneet Kaur
31	2216832	Naaz Kaura
32	2216833	Navneet Kaur
33	2216834	Nikhil Kakkar
34	2216835	Parampreet Singh
35	2216836	Paras Sharma
36	2216837	Parul
37	2216838	Parbhat Kumar Chaudhary
38	2216839	Rabia Deol
39	2216840	Rahul Mahajan
40	2216841	Ridhima Sharma
41	2216842	Rishap
42	2216843	Ritik Sharma
43	2216844	Sachin Sharma
44	2216845	Sahajpal Singh
45	2216846	Sarthak Mahajan
46	2216847	Shine Sharma
47	2216848	Shivam Abrol

  
ANRIT SAR



48	2216849	Shivangi
49	2216850	Simran Rout
50	2216851	Simranjeet Kaur
51	2216852	Sourav Sharma
52	2216853	Supreet Kaur
53	2216854	Surinder Singh
54	2216855	Syed Ariquat Andrabi
55	2216856	Syed Tehreen Faiza
56	2216857	Vasu Dev

  
WINDA COLLEGE OF FINANCE  
AMRITSAR





FIELD VISIT REPORT  
ON

"PACKAGING MATERIALS"

SUBMITTED BY : AASBIR KAUR

CLASS : B. PHARM SEM I

DATE OF SUBMISSION : 11.11.2022

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JLSA COLLEGE OF PHARMACY  
JALNTSAR



# PACKAGING

Packaging is the science, art and technology of enclosing or protecting products for distribution, storage, sale and use.



Pharmaceutical packaging can be defined as the economical means of providing presentation, protection, identification, information, convenience, compliance, integrity and stability of product.

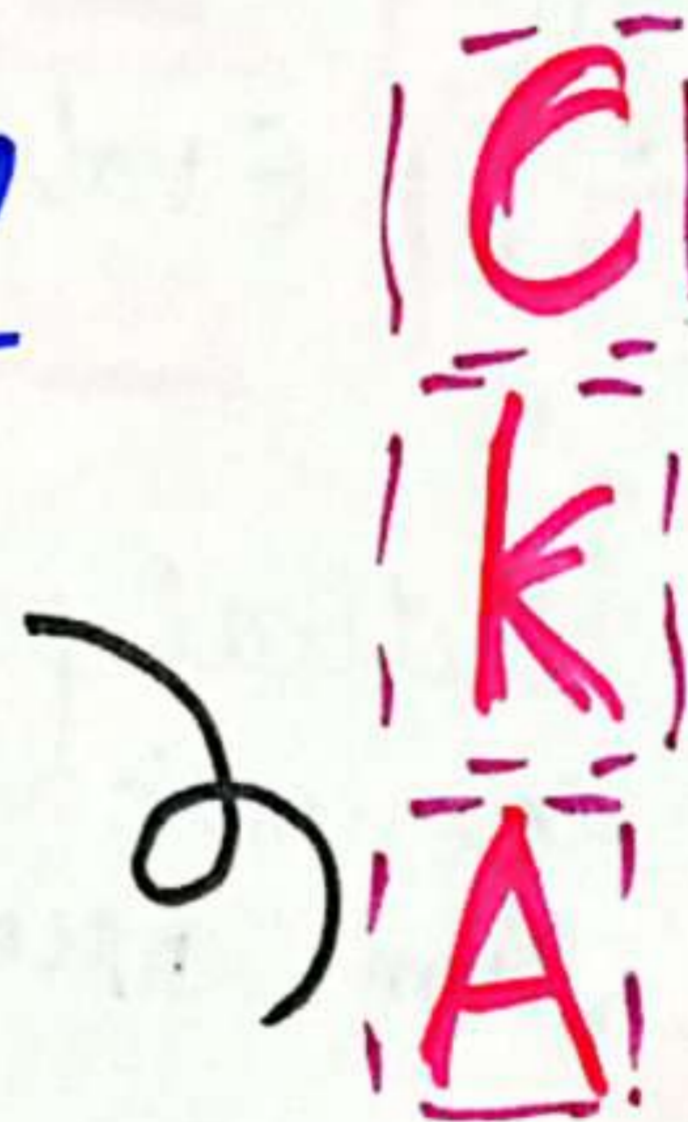


# Types of Packaging

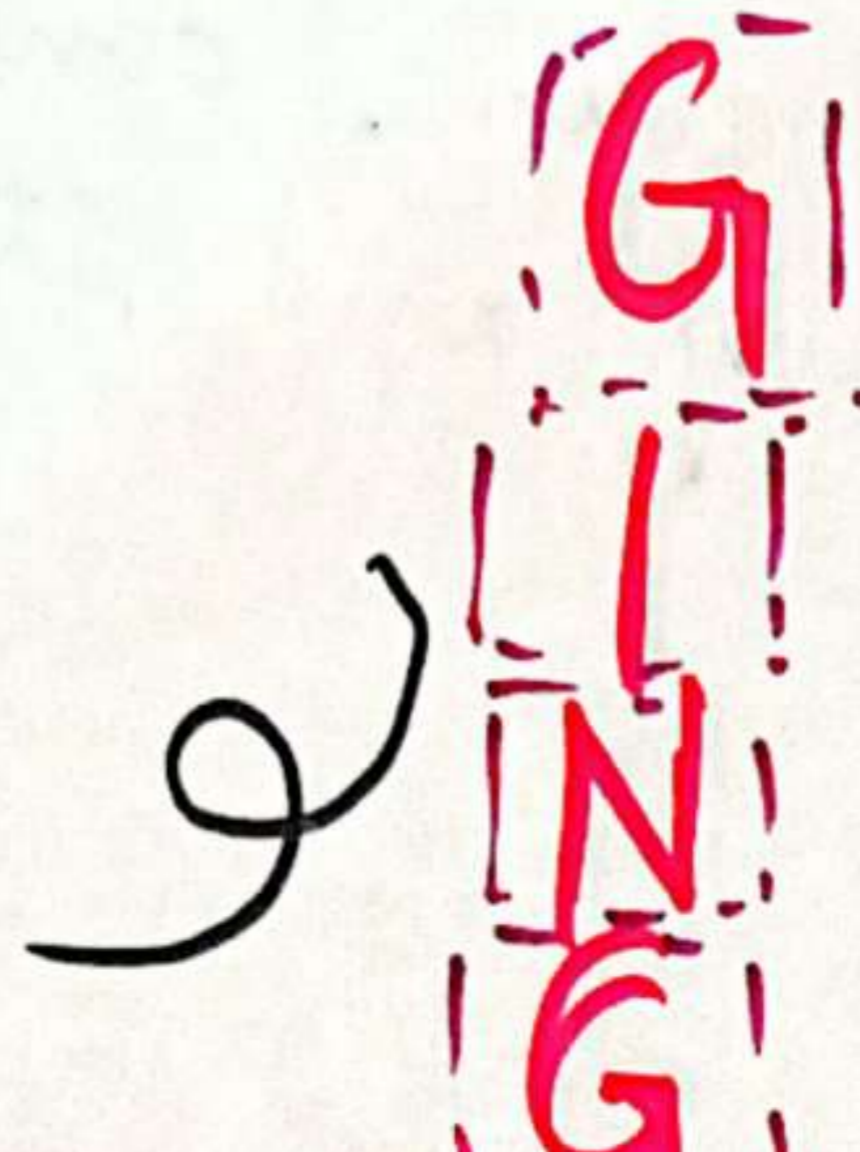
\* Primary Packaging



\* Secondary Packaging



\* Tertiary Packaging





# PRIMARY PACKAGING

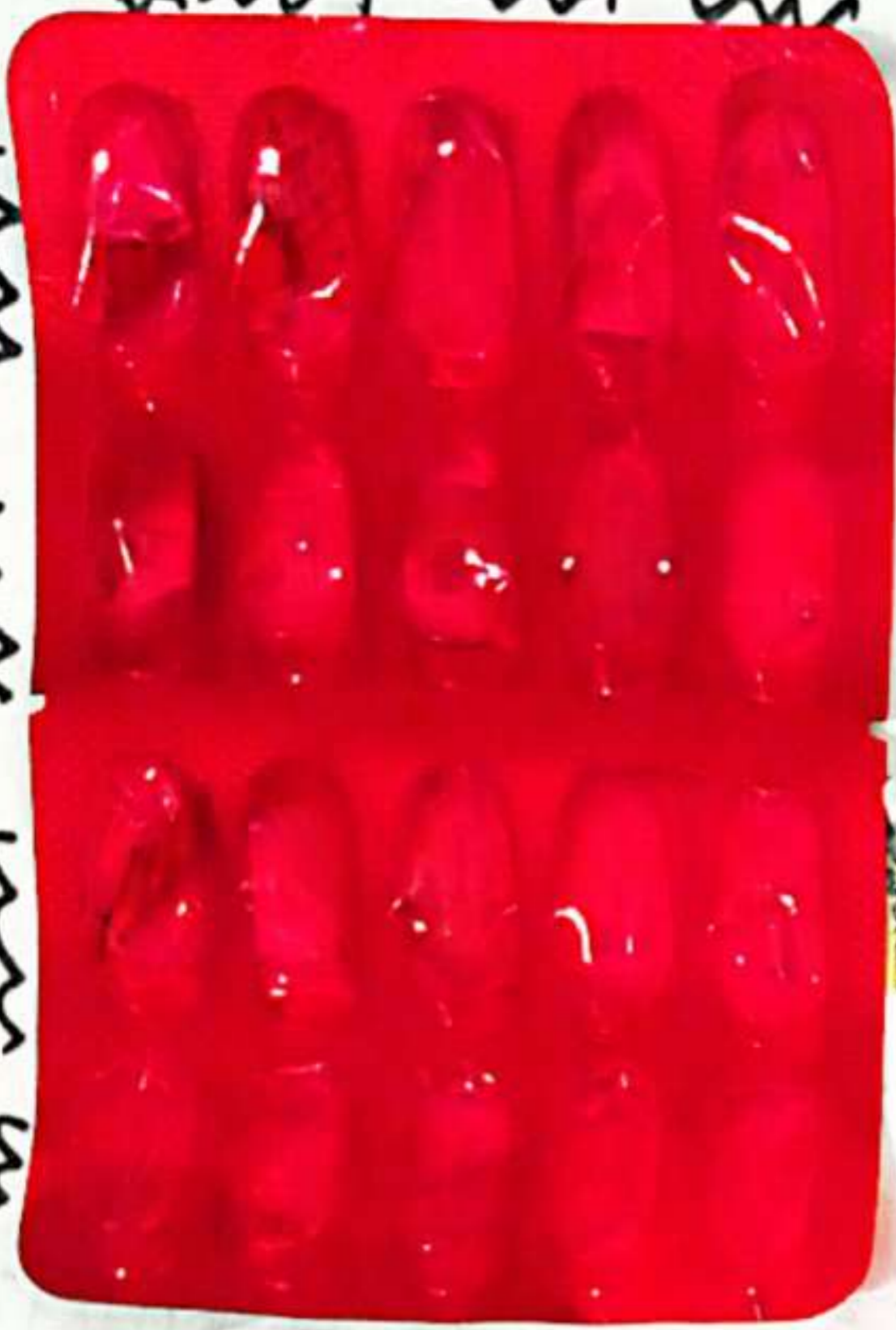
Also known as sales packaging, primary packaging is significant for pharma companies. This packaging is direct contact with drugs and medicines therefore, the packaging needs to be inert and should not cause any alteration to the salt in the dosage. If the primary packaging is not done correctly, it may affect the drug, and the quality of medicine can be affected.

The material used for primary packaging must be neutral to ensure it doesn't interact with the pharmaceutical product during its entire life.

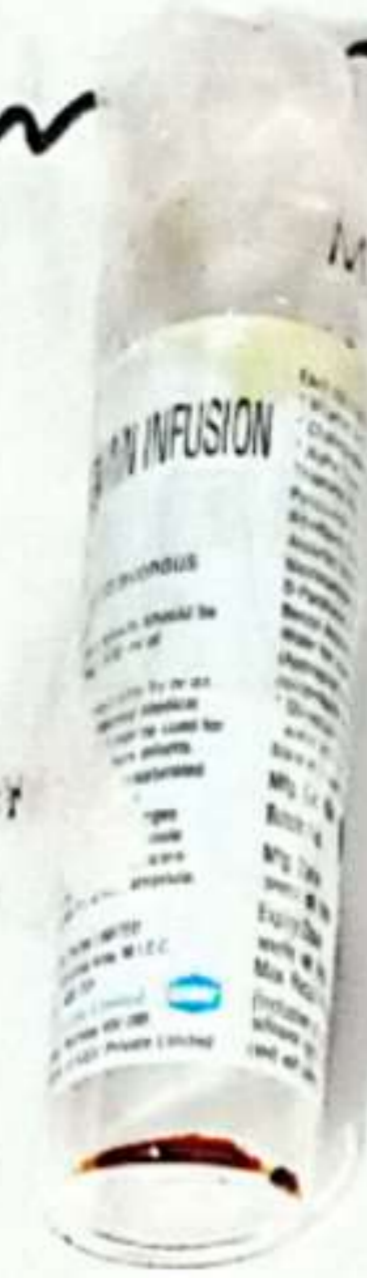
However, if the packaging fails, the drug may become life threatening for the patients who consume it.

how





Strip Packaging



Ampoules



Vials

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Blister packs



Bottle

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AMBALA



# SECONDARY PACKAGING

Once the primary packaging is done, it is the time for the packaging that is called secondary packaging. It is just another layer of packaging which can be any printed material like boxes.

All the important information is printed on these boxes like ingredient, manufacturer's name, address, warning and type of medicine. The printed information helps to manufacture to distinguish between different boxes with different drugs easily. The secondary packaging gives the brand name / image at the same time, further protects them during transportation.





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# TERTIARY PACKAGING

The last type of packaging i.e. tertiary packaging, is important for the shipping process. The end consumers don't see this packaging. The retailers often remove them before they showcase the medicine in the shops or clinics.

The main objective of tertiary packaging is safeguarding primary and secondary packaging from the external environment during storage and transportation. The most popular pharmaceutical tertiary packaging are plastic boxes, cartons, and shrink wraps.

Principal  
KHALSA COLLEGE OF PHARMACY  
AMRITSAR





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K  
13/11/2022



## KHALSA COLLEGE OF PHARMACY, AMRITSAR

### B.PHARMACY IV SEMESTER (2021-2025)

The following students of B.Pharm sem IV of 2021-2025 batch have undergone industrial visit to Ramson Remedies on 11<sup>th</sup> March 2023.

Sr. No.	Reg. No.	Name of Student
1	2117019	Aashima
2	2117020	Abhineet Ladoiya
3	2117022	Akashdeep Singh
4	2117023	Akashdeep Singh
5	2117024	Ankit Kumar
6	2117025	Ankuj Kumar
7	2117026	Anshika
8	2117027	Ashnoor Kaur
9	2117028	Ashutosh Gautam
10	2117029	Avneet Kaur
11	2117030	Ayush Behal
12	2117031	Chaitanya Mehra
13	2117032	Damanpreet Singh
14	2117033	Geetanjali Sharma
15	2117034	Gurlivleen Kaur
16	2117035	Gurmukh Singh
17	2117036	Harchit Kaur
18	2117037	Hardik Arora
19	2117038	Hari Singh
20	2117039	Harpritam Singh
21	2117040	Hunarpreet Kaur





22	2117041	Inderjit Pradhan
23	2117042	Jaskaran Singh
24	2117043	Jaspal Singh
25	2117044	Karan Bedi
26	2117045	Kartik Gupta
27	2117046	Komalpreet Kaur
28	2117047	Komalpreet Kaur
29	2117048	Manbir Kaur
30	2117049	Manik Sareen
31	2117050	Manik Sharma
32	2117051	Maninder Kaur
33	2117052	Manmeet Kaur
34	2117053	Manmohan Singh
35	2117054	Mansi Thakur
36	2117056	Mehrab Kaur Sandhu
37	2117057	Muskan
38	2117058	Navpreet Singh
39	2117059	Pardeep Singh
40	2117061	Prabhjot Kaur
41	2117062	Priynka Tura
42	2117063	Rajbir Singh
43	2117065	Raunak Tiwari
44	2117066	Rayan Bhardwaj
45	2117067	Rhythm Mahajan
46	2117068	Sahil Shingari
47	2117069	Sanchi Mahajan





48	2117070	Savreen Kaur
49	2117072	Shobit Gupta
50	2117074	Sukhmanpreet Kaur
51	2117075	Sukhmeet Singh Ahuja
52	2117077	Tanisha
53	2117078	Tanu Ashmeet Kaur
54	2117079	Tushar Saroop
55	2117080	Varun Bawa
56	2117081	Vivek
57		Nikhil
58		Muskan
59		Sanmeet Singh
60		Bhavesh
61		Jivtesh Singh







Estd. 2009

# ਖ਼ਾਲਸਾ ਕਾਲਜ ਆਫ਼ ਫਾਰਮੇਸੀ Khalsa College of Pharmacy

G.T. ROAD, AMRITSAR 143002

Ph.: 0183-2450215

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Web: www.khalsacollegepharmacy.org

Approved by AICTE, PCI, New Delhi & Punjab Govt. Affiliated to PTU, Kapurthala, PSBTE & IT, Chandigarh

Ref. No. KCP/3295-A

Dated 2.3.2023

To

The Manager,  
Ramson Remedies,  
Pharmaceutical Manufacturers, Focal point  
Amritsar.

Subject: Regarding Permission for One Day Industrial Visit

Sir/Madam

This is a request letter for one day visit of B pharmacy IV semester students of Khalsa College of Pharmacy, Amritsar in your prestigious industry. The motive of this visit is to boost the technical knowledge of students and to understand the working protocol of industry.

Kindly allow the visit of sixty one students and facilitate them to visit your industry.

Thanking You.

Regards

  
Director-Principal

Khalsa College of Pharmacy  
Amritsar



# RAMSON REMEDIES



PHARMACEUTICAL MANUFACTURERS

186-187, INDUSTRIAL FOCAL POINT, MEHTA ROAD,  
AMRITSAR (Pb) - 143006, INDIA

Phone : 0183 - 2583543  
Telefax : 0183 - 2700530  
Email : ramsonremedies186@yahoo.co.in

Ref no RR/1075/2022-23

dt. 4.3.2023

To

Director-Principal  
Khalsa College of Pharmacy  
Amritsar

Subject: Regarding acceptance of industrial visit

We are pleased to inform you that your request of one day visit to our industry has been accepted. The scheduled day is 11<sup>th</sup> March 2023 and visiting hours allowed will be between 10:00-1:00 pm, you are requested to strict to the timings to avoid the inconvenience. We will allow entering 30 students in one lot because of our working policy. So students will entertained in two groups between 10:00 to 11:30 am and 11:30-1:00 pm. We agree that this visit will improve the technical knowledge and helps the students to gain professional identity. Kindly arrange the students into two groups and one faculty member with each group to maintain the decorum of industry.

Regards  
  
Manager-Secretary





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Ph: 0183-2450215

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Estd 2009

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Web: www.khalsacollegepharmacy.org

Approved by AICTE, PCI, New Delhi & Punjab Govt. Affiliated to PTU, Kapurthala, P5BTE & IT, Chandigarh

Date: 2<sup>nd</sup> March 2023

**Circular**

This is for the information to B. pharmacy Semester IV students that industrial visit to Ramson Remedies, Pharmaceutical Manufacturers, Focal point Amritsar has been scheduled on 11<sup>th</sup> March 2023. All students should come in proper uniform and maintain the discipline during the visiting hours of industry. Any kind of indiscipline will not be tolerated and strict action will be taken against the defaulter. The reporting time will be 9:00 pm at main gate of Khalsa College of pharmacy, Amritsar.

  
Director-Principal  
Dr. R.K. Dhawan





Estd 2009

e-mail. khalsacop.asr2009@gmail.com

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Approved by AICTE, PCI, New Delhi & Punjab Govt. Affiliated to PTU, Kapurthala, PSBTE & IT, Chandigarh

Date: 2<sup>nd</sup> March 2023

### Circular

This is for the information to all the parents of students of B pharmacy IV Semester that industrial visit to Ramson Remedies, Pharmaceutical Manufacturers, Focal point Amritsar is scheduled on 11<sup>th</sup> March 2023. Kindly send your ward on particular day in proper uniform and asked them to maintain the discipline during the visiting hours of industry. The reporting time will be 9:00pm, kindly be strict to the timings.

  
Director-Principal  
Dr. R.K. Dhawan



ONE DAY INDUSTRIAL LIST OF B.PHARM STUDENTS TO RAMSON  
REMEDIES



Latitude : 31.6213°  
Longitude : 74.91928°  
Elevation : 11.52 m  
Accuracy : 98.40 m  
Azimuth : 309.0° NW  
Pitch : 90.3°(-79.01°)

*Khadim*  
PRINCIPAL  
KHALIFA COLLEGE OF PHARMACY  
AMMAN



Latitude : 31.62132°  
Longitude : 74.91929°  
Elevation : 11.52 m  
Accuracy : 92.90 m  
Azimuth : 260.0° W  
Pitch : 90.1°(-74.60°)

*Khadim*  
PRINCIPAL  
KHALIFA COLLEGE OF PHARMACY  
AMMAN

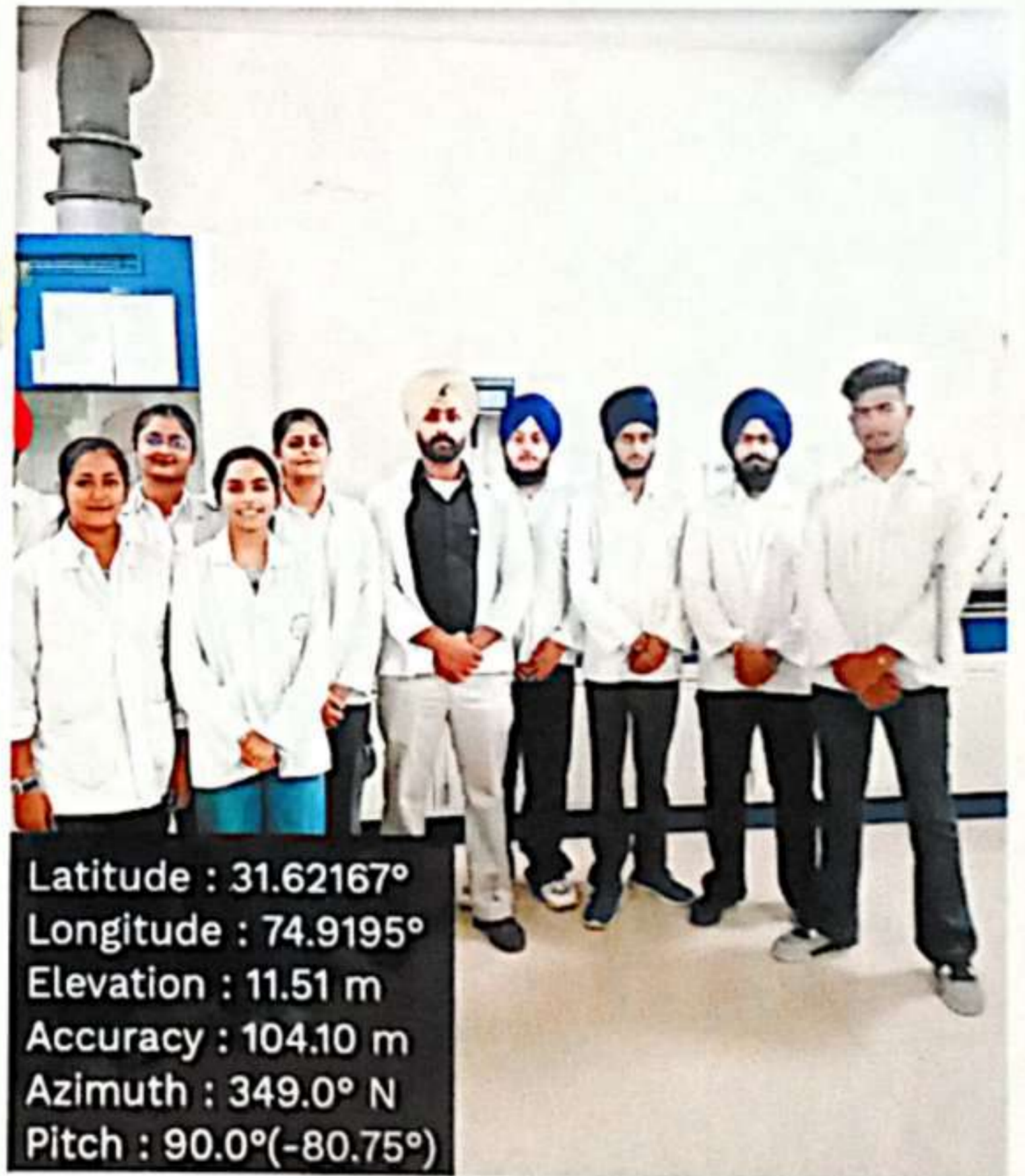


ONE DAY INDUSTRIAL LIST OF B.PHARM STUDENTS TO RAMSON  
REMEDIES



Latitude : 31.62163°  
Longitude : 74.92013°  
Elevation : 11.52 m  
Accuracy : 63.49 m  
Azimuth : 179.0° S  
Pitch : 91.7°(-85.12°)

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Latitude : 31.62167°  
Longitude : 74.9195°  
Elevation : 11.51 m  
Accuracy : 104.10 m  
Azimuth : 349.0° N  
Pitch : 90.0°(-80.75°)

PRINCIPAL  
KHALSA COLLEGE OF PHARMACY

(a) 1



REPORT  
OF  
ONE DAY  
INDUSTRIAL VISIT  
TO  
RAMSON REMEDIES, AMRITSAR  
ON  
11.3.2023

SUBMITTED BY: TANISHA (2117077)

CLASS: B.PHARM SEMESTER IV





I, a student of B.Pharm sem IV visited Ramson remedies with my classmates on 11.3.2023, with my teacher Dr. Parminderjit Kaur. The visit was planned by Khalsa college of Pharmacy with prior permission and guidance of our Principal Dr R. K. Dhawan.

We reached Ramsons Remedies on scheduled time given by the company. We were greeted by the Manager(HR). The manger held a presentation to give us an overview of the company. He told us that the company was established in 1995 and caters to manufacturing and marketing of pharmaceutical products in India and abroad. The goal of the company was "commitment towards quality and customer satisfaction". It is a GMP and ISO certified company.

The company manufactures products for human as well as veterinary use. The products manufactured by the company include capsules, Dry injections, dry syrups, nasal drops, eye drops, ear drops, injections, liquid orals, nutritional food supplements, ointments, lotions, tablets and oral drops.

A few products manufactured and exported by the company include eg: MULTIVIT capsules, AMPICIN 250 & 500, LYCOVIT, RAMIGEL, GASTRO-GEL, QUDERM, CLOTRIDERM-TC etc.

The manger then guided us to the Production section of different products. The concerned production manager and other supporting staff of each manufacturing division showed us the different equipment's and their working. The company is equipped with many equipment's for formulation and evaluation of different dosage forms. A few equipments available in the company include UV spectrophotometer, Tablet press, laminar air flow, disintegration test apparatus, Roche Fibrilator, pH meter, HPLC, dissolution apparatus, packaging equipments etc. The guiding staff as well as the production manager of each division was very supportive.

After completing round of all divisions, we thanked the manager(HR) and other supporting staff for their time and guidance in helping us different aspects of manufacturing and evaluation of dosage forms manufactured in their company.

The visit overall increased my understanding of the working of different equipments in manufacturing and evaluation of capsules, Dry injections, dry syrups, nasal drops, eye drops, ear drops, injections, liquid orals, nutritional food supplements, ointments, lotions, tablets and oral drops.

I am thankful to my Principal for arranging an Industrial for us and also to Mrs Perminderjit Kaur Mam to accompany us. The industrial visit was very informative and would be crucial for development of our practical skills. We got the knowledge on different types of equipments used in formulation and evaluation of different dosage forms. We hope to get more chances further to have such an informative & wonderful experiences of visiting different industries.





**KHALSA COLLEGE OF PHARMACY, AMRITSAR**

**M.PHARMACY IV SEMESTER (2021-2023)**

The following students of M.Pharm Semester IV have completed their Research work in the academic session 2022-2023:

S.No.	Reg. No.	Name of student	Name of Supervisor	Name of Co Supervisor	Title of Research Work
1.	2117082	Naman Sethi	Dr Varinder Soni	Mr Gurpreet Singh	Qualitative And Quantitative Analysis Of Addictive Ingredients And Contaminants In Selected Brands Of Energy Drinks Available In Indian Market
2.	2117083	Abhay Sharma	Mr Nishant Kumar	Dr Prince Ahad	Timolol Maleate Loaded Nanostructured Lipid Carriers Incorporated Into In-Situ Gels To Improve Management Of Glaucoma
3.	2117084	Akshay Kumar	Dr Gurjeet Singh	-----	Development And Characterization Of Transfersomes Based Topical Gel For Enhancing The Efficacy Of Tolnaftate
4.	2117085	Aman Sharma	Dr Jasjeet Kaur Narang	Dr Amandeep Bhatia	Formulation And Evaluation Of Triamcinolone Acetonide Loaded Nanoemulsion Based Gel For The Treatment Of Psoriasis
5.	2117086	Aniket Malia	Dr Jasjeet Kaur Narang	Dr Lakhvir Kaur	Development And Evaluation Of Trans-Nasal Brain Targeted Aripiprazole Loaded Mucoadhesive Transfersomes For The Treatment Of Schizophrenia
6.	2117087	Komal	Dr Lakhvir Kaur	Dr Jasjeet Kaur Narang	Preparation And Characterization Of Novel Liquid Crystals Based Hydrogel Of Terbinafine Hydrochloride Against Mycosis
7.	2117088	Nitish Khajuria	Dr Gurjeet Singh	-----	Formulation And Evaluation Of Novel Biomimetic Drug Delivery System As Ufosomes For Topical Delivery Of Amphotericin-B.
8.	2117089	Priyanka	Dr Gurjeet Singh	Mr Anmol Dogra	Formulation And Evaluation Of A Novel Topical Niosomal Gel Of Butenafine Hydrochloride For Treatment Of Superficial Dermatophytosis
9.	2117090	Saharsh Khanna	Dr Lakhvir Kaur	Dr Prince Ahad	Development And Evaluation Of Liquid Crystal Based Systems Formed By Conjointly





					Associating Bexarotene And Curcumin For Topical Administration.
10.	2117091	Diksha Kumari	Dr Tajpreet Kaur	-----	Investigation On The Role Of Lansoprazole Against Gentamicin-Induced Nephrotoxicity In Rats
11.	2117092	Karan Dev	Dr Kamaldeep Kaur	-----	Investigation Of Protective Effect Of Ethyl-2-Methyl Quinoline-3-Carboxylate (Emqc), A Specific Gcn-5 Inhibitor Through Amelioration Of Mitochondrial Dysfunction In Diabetic Peripheral Artery Disease
12.	2117093	Nitika Choudhary	Dr R. K.Dhawan	Dr Satinder Kaur	Pharmacological Evaluation Of <i>Cinnamomum Zeylanicum</i> Bark Oil And Its Combination With Donepezil For Alzheimer's Disease
13.	2117094	Radhika	Dr Kamaldeep Kaur	-----	Investigation Of Ethyl-2-Methyl Quinoline-3-Carboxylate (EMQC), A Specific GCN-5 Inhibitor, On Auto-Immune Pathway In Type I Diabetes Mellitus
14.	2117095	Sonali Gupta	Dr Tajpreet kaur	-----	Investigation On The Role Of Nicotinamide Against Gentamicin-Induced Nephrotoxicity In Rats







Estd. 2009

# ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ

## Khalsa College of Pharmacy

G.T. ROAD, AMRITSAR 143002

e-mail: khalsacop.asr2009@gmail.com

Web: www.khalsacollegepharmacy.org

Approved by AICTE, PCI, New Delhi &amp; Punjab Govt. Affiliated to PTU, Kapurthala, PSBTE &amp; IT, Chandigarh

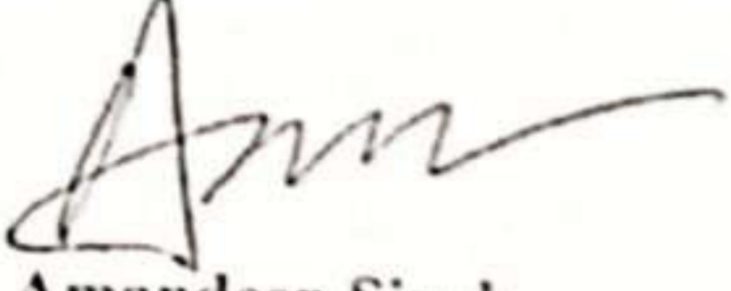
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Dated 7.8.2023

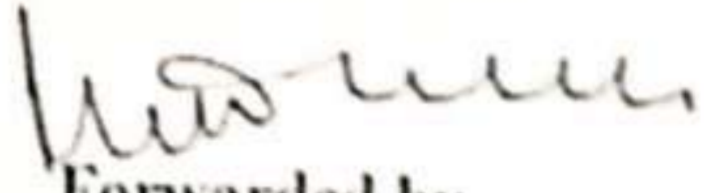
### CERTIFICATE

This is to certify that work contained in this thesis entitled "Development and Evaluation of Triamcinolone Acetonide Loaded Nanoemulsion Based Gel for The Treatment Of Psoriasis" submitted to I.K. Gujral Punjab Technical University, Kapurthala in partial fulfilment of the requirement for the degree of Masters of Pharmacy in Pharmaceutics embodies the research work carried out by Mr. Aman Sharma himself under our supervision and guidance at Department of Pharmaceutics, Khalsa College of Pharmacy, Amritsar. The work has not been submitted in part or in full for the award of any other diploma or degree in any other university/institute.

  
Dr. Jasjeet Kaur Narang  
(Supervisor)

  
Dr. Amandeep Singh  
(Co-supervisor)

  
KHALSA COLLEGE OF PHARMACY  
AMRITSAR

  
Forwarded by  
Director-Principal  
Khalsa College of Pharmacy  
Amritsar, Punjab





Estd. 2009

Ph.: 0183-245021

# ਖਾਲਸਾ ਕਾਲਜ ਆਫ਼ ਫਾਰਮੇਸੀ Khalsa College of Pharmacy

G.T. ROAD, AMRITSAR 143002

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Approved by AICTE, PCI, New Delhi & Punjab Govt. Affiliated to PTU, Kapurthala, PSBTE & IT, Chandigarh

Ref. No. KCP/H.007....

Dated 7.8.2023....

## CERTIFICATE

This is to certify that work contained in this thesis entitled "Development and Evaluation of Trans-Nasal Brain Targeted Aripiprazole Loaded Mucoadhesive Transferosomes for the Treatment of Schizophrenia" submitted to I.K. Gujral Punjab Technical University, Kapurthala in partial fulfilment of the requirement for the degree of Masters of Pharmacy in Pharmaceutics embodies the research work carried out by Mr. Aniket Malia himself under our supervision and guidance at Department of Pharmaceutics, Khalsa College of Pharmacy, Amritsar. The work has not been submitted in part or in full for the award of any other diploma or degree in any other university/institute.

Dr. Jasjeet Kaur Narang  
(Supervisor)

Dr. Lakhvir Kaur  
(Co-supervisor)

PRINCIPAL  
KHALSA COLLEGE OF PHARMACY  
AMRITSAR

Forwarded by  
Director-Principal  
Khalsa College of Pharmacy  
Amritsar, Punjab



List of students of B.Sc MLS Sem-2 completed their assigned field work Clinical Survey on Health Care entitled 'Clinical manifestations of Covid-19 in general population of Amritsar, in Session 2022-23.

S.No.	Reg. No.	Name of student
1	2223635	Akashdeep singh
2	2223636	Amrit singh
3	2223637	Ankit
4	2223638	Ankita
5	2223639	Anmol Kaur
6	2223640	Balister
7	2223641	Chandandeep singh
8	2223642	Deepshikha
9	2223643	Dinesh badgal
10	2223644	Divanshi
11	2223646	Gurleen kaur
12	2223647	Gurpreet singh
13	2223648	Honey
14	2223649	Jagroop Singh
15	2223651	Jaskaran singh
16	2223652	Jasleen kaur
17	2223653	Kamal krishan
18	2223654	Kamini
19	2223655	Karan sharma
20	2223656	Karandeep Singh
22	2223658	Kirti
22	2223659	Komalpreet MS
23	2223660	Komalpreet JS
24	2223661	Krishna
25	2223662	Lovedeep singh
26	2223663	Manjot kaur
27	2223664	Manmeet kaur
28	2223665	Manpreet Kaur
29	2223666	Mansi
30	2223667	Muhamad Arshad
31	2223669	Neeraj
32	2223670	Palkdeep
33	2223672	Paramjit Singh
34	2223673	Rajwant kaur
35	2223674	Rajwant kaur SS
36	2223675	Rajwant kaur BS
37	2223676	Randheer singh
38	2223677	Ravinder singh
49	2223678	Ritik
40	2223679	Sachin maurya
41	2223681	Sanjay singh
42	2223682	Saresht kumar
43	2223683	Shaina
44	2223685	Simarjeet kaur
45	2223686	Simranjeet kaur

*Indu*





46	2223687	Snehpreet kaur
47	2223688	Sukhmanpreet
48	2223690	Syed bais ali andrabi
49	2223692	Vanshika

*[Handwritten signature]*





## CLINICAL DATA COLLECTION

### TITLE : CLINICAL MANIFESTATIONS OF COVID-19 IN GENERAL POPULATION OF AMRITSAR

Answers to the following questions will help to understand the medical history and various symptoms associated with COVID-19. Clinical data would be helpful to expand knowledge on Post-Covid-19 condition, and support patient care and public health interventions.

PATIENT NAME Sukhjinder Singh  
PATIENT DATE OF BIRTH 12.06.1958 AGE 65  
LOCALITY Beas  
GENDER Male

1. Did you diagnosed with Covid-19 during acute illness? yes

2. Did you have a PCR test? yes

3. Did you admitted to the hospital during illness? yes

If yes, Duration of hospital stay 14 days

4. Did you receive oxygen therapy during the acute illness? yes

5. Did you experience any of the following symptoms after the acute illness of COVID-19. Mark tick ✓ to indicate if you had following symptoms/conditions

- Anxiety
- Chest Pain
- Fever
- Nausea/Vomiting
- Persistent Dry Cough
- Shortness of breath
- Skin Rash
- Reduced smell and taste
- Weight Loss
- Diarrhea
- Joint pain/Swelling
- Headache
- Muscle Pain
- Loss of appetite
- Lumpy lesions

6. Did you suffer from any of the below diseases during COVID infection?

- Cardiovascular diseases
- Diabetes
- Asthma
- Bronchitis
- Cancer
- Other

SUBMITTED BY Kaandeep Singh  
REG NO. 2223656  
CLASS Bsc MLS 2nd Sem  
INSTITUTE Khalsa College of Pharmacy and Technology





**CLINICAL DATA COLLECTION**

**TITLE : CLINICAL MANIFESTATIONS OF COVID-19 IN GENERAL POPULATION OF AMRITSAR**

Answers to the following questions will help to understand the medical history and various symptoms associated with COVID-19. Clinical data would be helpful to expand knowledge on Post-Covid-19 condition, and support patient care and public health interventions.

PATIENT NAME Rajan Chawla  
PATIENT DATE OF BIRTH 6.11.1973 AGE 50  
LOCALITY Khet Vihar Amritsar  
GENDER Male

- 1. Did you diagnosed with Covid-19 during acute illness? yes
- 2. Did you have a PCR test? yes
- 3. Did you admitted to the hospital during illness? yes  
If yes, Duration of hospital stay 5 days
- 4. Did you receive oxygen therapy during the acute illness? no

5. Did you experience any of the following symptoms after the acute illness of COVID-19. Mark tick  to indicate if you had following symptoms/conditions

- Anxiety
- Chest Pain
- Fever
- Nausea/Vomiting
- Persistent Dry Cough
- Shortness of breath
- Skin Rash
- Reduced smell and taste
- Weight Loss
- Diarrhea
- Joint pain/Swelling
- Headache
- Muscle Pain
- Loss of appetite
- Lumpy lesions

6. Did you suffer from any of the below diseases during COVID infection?

- Cardiovascular diseases
- Diabetes
- Asthma
- Bronchitis
- Cancer
- Other

SUBMITTED BY Gurleen Kaur  
REG NO. 2223646  
CLASS Bsc MLS 2<sup>nd</sup> Sem  
INSTITUTE Khalsa College of Pharmacy & Technology





**CLINICAL DATA COLLECTION**

**TITLE : CLINICAL MANIFESTATIONS OF COVID-19 IN GENERAL POPULATION OF AMRITSAR**

Answers to the following questions will help to understand the medical history and various symptoms associated with COVID-19. Clinical data would be helpful to expand knowledge on Post-Covid-19 condition, and support patient care and public health interventions.

PATIENT NAME Harjinder Singh  
PATIENT DATE OF BIRTH 4.10.1977 AGE 46  
LOCALITY Batala  
GENDER male

- 1. Did you diagnosed with Covid-19 during acute illness? yes
- 2. Did you have a PCR test? yes
- 3. Did you admitted to the hospital during illness? yes
- If yes, Duration of hospital stay yes, 7 days
- 4. Did you receive oxygen therapy during the acute illness? no

5. Did you experience any of the following symptoms after the acute illness of COVID-19. Mark tick ✓ to indicate if you had following symptoms/conditions

- Anxiety
- Chest Pain
- Fever
- Nausea/Vomiting
- Persistent Dry Cough
- Shortness of breath
- Skin Rash
- Reduced smell and taste
- Weight Loss
- Diarrhea
- Joint pain/Swelling
- Headache
- Muscle Pain
- Loss of appetite
- Lumpy lesions

6. Did you suffer from any of the below diseases during COVID infection?

- Cardiovascular diseases
- Diabetes
- Asthma
- Bronchitis
- Cancer
- Other

SUBMITTED BY Dinesh Badgal  
REG NO. 2223643  
CLASS Bsc Mls 2nd Sem  
INSTITUTE Khalsa College of Pharmacy and Technology





## CLINICAL DATA COLLECTION

### TITLE : CLINICAL MANIFESTATIONS OF COVID-19 IN GENERAL POPULATION OF AMRITSAR

Answers to the following questions will help to understand the medical history and various symptoms associated with COVID-19. Clinical data would be helpful to expand knowledge on Post-Covid-19 condition, and support patient care and public health interventions.

PATIENT NAME KULDEEP SINGH

PATIENT DATE OF BIRTH 19-12-1964

AGE 59

LOCALITY AMRITSAR

GENDER MALE

1. Did you diagnosed with Covid-19 during acute illness? Yes

2. Did you have a PCR test? Yes

3. Did you admitted to the hospital during illness? Yes

If yes, Duration of hospital stay 4 days

4. Did you receive oxygen therapy during the acute illness? No

5. Did you experience any of the following symptoms after the acute illness of COVID-19. Mark tick  to indicate if you had following symptoms/conditions

- Anxiety
- Chest Pain
- Fever
- Nausea/Vomiting
- Persistent Dry Cough
- Shortness of breath
- Skin Rash
- Reduced smell and taste
- Weight Loss
- Diarrhea
- Joint pain/Swelling
- Headache
- Muscle Pain
- Loss of appetite
- Lumpy lesions

6. Did you suffer from any of the below diseases during COVID infection?

- Cardiovascular diseases
- Diabetes
- Asthma
- Bonchitis
- Cancer
- Other

SUBMITTED BY Anmol Kaur

REG NO. 2223639

CLASS BSC MLS (1<sup>st</sup> Sem)

INSTITUTE Khalsa College of Pharmacy & Technology





## CLINICAL DATA COLLECTION

### TITLE : CLINICAL MANIFESTATIONS OF COVID-19 IN GENERAL POPULATION OF AMRITSAR

Answers to the following questions will help to understand the medical history and various symptoms associated with COVID-19. Clinical data would be helpful to expand knowledge on Post-Covid-19 condition, and support patient care and public health interventions.

PATIENT NAME Gunveen Kaur

PATIENT DATE OF BIRTH 5/2/1983

AGE 40

LOCALITY Amritsar

GENDER female

1. Did you diagnosed with Covid-19 during acute illness? yes

2. Did you have a PCR test? yes

3. Did you admitted to the hospital during illness? yes

If yes, Duration of hospital stay 14 days

4. Did you receive oxygen therapy during the acute illness? No

5. Did you experience any of the following symptoms after the acute illness of COVID-19. Mark tick  $\checkmark$  to indicate if you had following symptoms/conditions

- Anxiety
- Chest Pain
- Fever
- Nausea/Vomiting
- Persistent Dry Cough
- Shortness of breath
- Skin Rash
- Reduced smell and taste
- Weight Loss
- Diarrhea
- Joint pain/Swelling
- Headache
- Muscle Pain
- Loss of appetite
- Lumpy lesions

6. Did you suffer from any of the below diseases during COVID infection?

- Cardiovascular diseases
- Diabetes
- Asthma
- Bronchitis
- Cancer
- Other

SUBMITTED BY Balister Singh

REG NO. 2223640

CLASS BSc MLS Sem II

INSTITUTE Khalisa College of Pharmaceutical Technology.





List of students of B.Sc MLS Sem-4 completed their field work on 'History taking and clinical data collection in diabetes patients' in Session 2022-23.

S.No.	Reg. No.	Name
1	1929677	Irvandeep Kaur
2	2123702	Aarti
3	2123703	Aayusha Rani
4	2123704	Aditi Sharma
5	2123705	Amanpreet
6	2123705	Armanpreet Singh
7	2123709	Bhagwant Singh
8	2123710	Charanjeet
9	2123711	Diljit Singh
10	2123712	Farhan
11	2123714	Gurdeep Kaur
12	2123715	Gurkirpal Singh
13	2123716	Gurmanjot Singh
14	2123717	Gurpartap Singh
15	2123718	Gursahib Singh
16	2123719	Harmeet Kaur
17	2123720	Jasmeet Kaur GS
18	2123721	Jasmeet Kaur SS
19	2123722	Jaswinder Singh
20	2123723	Jatin Baboria
21	2123724	Karan Singh
22	2123725	Karanbir Singh
23	2123726	Kashish
24	2123727	Khushmanbir Kaur
25	2123728	Khushpreet Kaur
26	2123729	Lalit Kumar
27	2123730	Lovepreet Singh
28	2123731	Malkeet Singh
29	2123732	Manpreet Kaur
30	2123734	Mohit Sharma
31	2123735	Muskaan Mattu
32	2123736	Onkar Singh
33	2123737	Parmeet Kaur
34	2123738	Parveen Kaur
35	2123739	Pawandeep Kaur
36	2123740	Prabhjot Kaur
37	2123741	Rahul
38	2123742	Ramandeep Kaur
39	2123744	Ramanpreet Kaur
40	2123745	Ratinderbir Kaur
41	2123747	Rohit
42	2123748	Sanpreet Kaur
43	2123750	Sarojdeep Kaur
44	2123751	Sheweta Thakur
45	2123752	Simarjeet Singh
46	2123753	Simran

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47	2123754	Sukhmandeep Kaur
48	2123755	Tanveer Kaur
49	2223694	Akanksha
50	2223695	Ashish
51	2223696	Darpan
52	2223697	Ekampreet
53	2223698	Hritik
54	2223699	Laxmi
55	2223703	Samiksha
56	2223704	Sarabraj
57	2223705	Shubhdeep
58	2223706	Sania
59	2223707	Sukhmanpreet

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HISTORY TAKING AND CLINICAL DATA COLLECTION IN DIABETES PATIENTS

PATIENT NAME Rani

PATIENT DATE OF BIRTH 05-08 1984

AGE 39

LOCALITY Mehra Chowk Distt:- Amritsar

GENDER Female

1. Type of Diabetes? Type 1  Type 2  MODY  Rare form of diabetes
2. Method of monitoring blood glucose. Glucometer  Laboratory  Glycated hemoglobin
3. Any Complication? Microvascular  Macrovascular
4. Microvascular Complications: Retinopathy  Nephropathy  Neuropathy
5. Macrovascular Complications: Coronary Artery disease  Cerebrovascular disease  Peripheral vascular disease
6. Diet: Vegetarian  Non-vegetarian
7. Use of artificial sweeteners: Yes  No
8. Physical Activity: Yes  No
9. Family History: Mother diabetic  Father diabetic  Siblings
10. Other significant co-morbidities: Depression  Obstructive Sleep Apnea  Hypogonadism  Depression
11. Any Skin Problem: Yes  No
12. Medication: Yes  No . If yes, name of the medicine Sitaride - M. forte
13. Insulin: Yes  No
14. Have you had symptoms of low blood sugars? Yes  No

15. Latest Biochemical Tests:

Glucose 134 mg/dl

Cholesterol 166 mg/dl

Triglycerides 205 mg/dl

Urine albumin Trace (+)

SUBMITTED BY Sarandeep Kaur

REG NO. 2123750

CLASS BSc. MLS

INSTITUTE Khalsa college of Pharmacy & Technology





HISTORY TAKING AND CLINICAL DATA COLLECTION IN DIABETES PATIENTS

PATIENT NAME Mrs. Gurdeep Kaur  
PATIENT DATE OF BIRTH June, 27, 1955 AGE 68  
LOCALITY Palm Vihar, Amritsar  
GENDER Female

1. Type of Diabetes? Type 1  Type 2  MODY  Rare form of diabetes
2. Method of monitoring blood glucose. Glucometer  Laboratory  Glycated hemoglobin
3. Any Complication? Microvascular  Macrovascular
4. Microvascular Complications: Retinopathy  Nephropathy  Neuropathy
5. Macrovascular Complications: Coronary Artery disease  Cerebrovascular disease  Peripheral vascular disease
6. Diet: Vegetarian  Non-vegetarian
7. Use of artificial sweeteners: Yes  No
8. Physical Activity: Yes  No
9. Family History: Mother diabetic  Father diabetic  Siblings
10. Other significant co-morbidities: Depression  Obstructive Sleep Apnea  Hypogonadism  Depression
11. Any Skin Problem: Yes  No
12. Medication: Yes  No . If yes, name of the medicine Metformin Hydrochloride Prolonged Release Tablet and (Estapride M2) Glimepiride.
13. Insulin: Yes  No
14. Have you had symptoms of low blood sugars? Yes  No

15. Latest Biochemical Tests:

Glucose 126 mg/dl  
Cholesterol 166 mg/dl  
Triglycerides 200 mg/dl  
Urine albumin Trace+

SUBMITTED BY Laxmi Maurya

REG NO. 2223699

CLASS BSc. MLT

INSTITUTE Khalsa College of Pharmacy & Technology





HISTORY TAKING AND CLINICAL DATA COLLECTION IN DIABETES PATIENTS

PATIENT NAME Mrs. George  
PATIENT DATE OF BIRTH May, 6, 1963. AGE 60  
LOCALITY Masitha Road Bypass Amritsar  
GENDER Male

1. Type of Diabetes? Type 1  Type 2  MODY  Rare form of diabetes
2. Method of monitoring blood glucose. Glucometer  Laboratory  Glycated hemoglobin
3. Any Complication? Microvascular  Macrovascular
4. Microvascular Complications: Retinopathy  Nephropathy  Neuropathy
5. Macrovascular Complications: Coronary Artery disease  Cerebrovascular disease  Peripheral vascular disease
6. Diet: Vegetarian  Non-vegetarian
7. Use of artificial sweeteners: Yes  No
8. Physical Activity: Yes  No
9. Family History: Mother diabetic  Father diabetic  Siblings
10. Other significant co-morbidities: Depression  Obstructive Sleep Apnea  Hypogonadism
11. Any Skin Problem: Yes  No
12. Medication: Yes  No . If yes, name of the medicine Glimperide & Metformin Hydrochloride SR Tab. (4lycohav & SR).
13. Insulin: Yes  No
14. Have you had symptoms of low blood sugars? Yes  No

15. Latest Biochemical Tests:  
Glucose 130 mg/dl.  
Cholesterol 200 mg/dl  
Triglycerides 179 mg/dl  
Urine albumin Trace +2

SUBMITTED BY Laxmi Mawya  
REG NO. 2223699  
CLASS BSC-MLS.  
INSTITUTE Khalsa College of Pharmacy & Technology.





HISTORY TAKING AND CLINICAL DATA COLLECTION IN DIABETES PATIENTS

PATIENT NAME JANDEEP KUMAR

PATIENT DATE OF BIRTH 12/8/1981

AGE 42

LOCALITY Dadian Gujjan

GENDER Male

1. Type of Diabetes? Type 1  Type 2  MODY  Rare form of diabetes
2. Method of monitoring blood glucose. Glucometer  Laboratory  Glycated hemoglobin
3. Any Complication? Microvascular  Macrovascular
4. Microvascular Complications: Retinopathy  Nephropathy  Neuropathy
5. Macrovascular Complications: Coronary Artery disease  Cerebrovascular disease  Peripheral vascular disease
6. Diet: Vegetarian  Non-vegetarian
7. Use of artificial sweeteners: Yes  No
8. Physical Activity: Yes  No
9. Family History: Mother diabetic  Father diabetic  Siblings
10. Other significant co-morbidities: Depression  Obstructive Sleep Apnea  Hypogonadism
11. Any Skin Problem: Yes  No
12. Medication: Yes  No . If yes, name of the medicine Metamorphin
13. Insulin: Yes  No
14. Have you had symptoms of low blood sugars? Yes  No

15. Latest Biochemical Tests:

Glucose 113 mg/dl

Cholesterol 165 mg/dl

Triglycerides 175 mg/dl

Urine albumin trace (+)

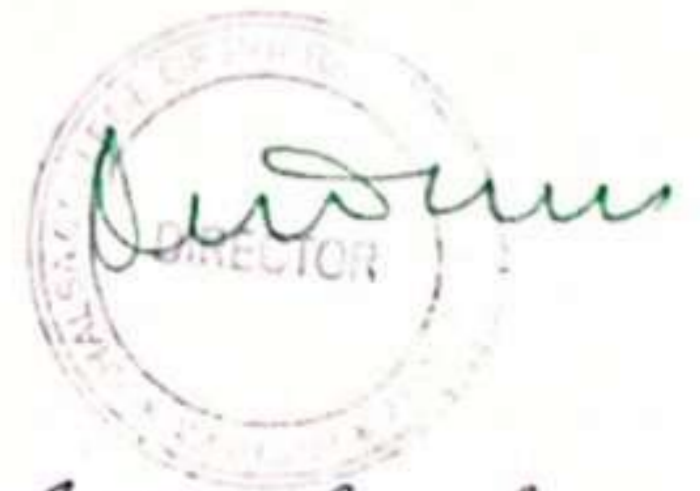
SUBMITTED BY Lovepreet Singh

REG NO. 2123730

CLASS BSC M.S

INSTITUTE KHALSA College of

Pharmacy & Technology





HISTORY TAKING AND CLINICAL DATA COLLECTION IN DIABETES PATIENTS

PATIENT NAME Balbir Singh  
PATIENT DATE OF BIRTH 12/5/1980 AGE 40  
LOCALITY Dasuya, distt. Hoshiarpur  
GENDER Male

1. Type of Diabetes? Type 1  Type 2  MODY  Rare form of diabetes
2. Method of monitoring blood glucose. Glucometer  Laboratory  Glycated hemoglobin
3. Any Complication? Microvascular  Macrovascular
4. Microvascular Complications: Retinopathy  Nephropathy  Neuropathy
5. Macrovascular Complications: Coronary Artery disease  Cerebrovascular disease  Peripheral vascular disease
6. Diet: Vegetarian  Non-vegetarian
7. Use of artificial sweeteners: Yes  No
8. Physical Activity: Yes  No
9. Family History: Mother diabetic  Father diabetic  Siblings
10. Other significant co-morbidities: Depression  Obstructive Sleep Apnea  Hypogonadism  Depression
11. Any Skin Problem: Yes  No
12. Medication: Yes  No . If yes, name of the medicine Glimipride
13. Insulin: Yes  No
14. Have you had symptoms of low blood sugars? Yes  No

15. Latest Biochemical Tests:

Glucose 235 mg/dl  
Cholesterol 199 mg/dl  
Triglycerides 180 mg/dl  
Urine albumin Trace (2+)

SUBMITTED BY Gurdeep Kaur

REG NO. 2123714

CLASS BSC. MLS

INSTITUTE ICHALSA COLLEGE OF Pharmacy and Technology





## HISTORY TAKING AND CLINICAL DATA COLLECTION IN DIABETES PATIENTS

PATIENT NAME Rashmi

PATIENT DATE OF BIRTH 1-1-1961

AGE 62

LOCALITY Bhangwan, Majitha

GENDER Female

1. Type of Diabetes? Type 1  Type 2  MODY  Rare form of diabetes
2. Method of monitoring blood glucose. Glucometer  Laboratory  Glycated hemoglobin
3. Any Complication ? Microvascular  Macrovascular
4. Microvascular Complications : Retinopathy  Nephropathy  Neuropathy
5. Macrovascular Complications : Coronary Artery disease  Cerebrovascular disease  Peripheral vascular disease
6. Diet : Vegetarian  Non-vegetarian
7. Use of artificial sweeteners : Yes  No
8. Physical Activity : Yes  No
9. Family History : Mother diabetic  Father diabetic  Siblings
10. Other significant co-morbidities: Depression  Obstructive Sleep Apnea  Hypogonadism  Depression
11. Any Skin Problem : Yes  No
12. Medication : Yes  No  If yes, name of the medicine \_\_\_\_\_
13. Insulin : Yes  No
14. Have you had symptoms of low blood sugars ? Yes  No

15. Latest Biochemical Tests :

Glucose 120mg/dl

Cholesterol -

Triglycerides -

Urine albumin -

SUBMITTED BY Sukhampreet Kaur

REG NO. 2223707

CLASS BSCMLS

INSTITUTE Khalsa College of Pharmacy & Technology





**List of students of B.Sc MLS Sem-4 visited hospital and diagnostic laboratory as part of their curriculum in Session 2022-23.**

S.No.	Reg. No.	Name
1	1929677	Irvandeep Kaur
2	2123702	Aarti
3	2123703	Aayusha Rani
4	2123704	Aditi Sharma
5	2123705	Amanpreet
6	2123705	Armanpreet Singh
7	2123709	Bhagwant Singh
8	2123710	Charanjeet
9	2123711	Diljit Singh
10	2123712	Farhan
11	2123714	Gurdeep Kaur
12	2123715	Gurkirpal Singh
13	2123716	Gurmanjot Singh
14	2123717	Gurpartap Singh
15	2123718	Gursahib Singh
16	2123719	Harmeet Kaur
17	2123720	Jasmeet Kaur GS
18	2123721	Jasmeet Kaur SS
19	2123722	Jaswinder Singh
20	2123723	Jatin Baboria
21	2123724	Karan Singh
22	2123725	Karanbir Singh
23	2123726	Kashish
24	2123727	Khushmanbir Kaur
25	2123728	Khushpreet Kaur
26	2123729	Lalit Kumar
27	2123730	Lovepreet Singh
28	2123731	Malkeet Singh
29	2123732	Manpreet Kaur
30	2123734	Mohit Sharma
31	2123735	Muskaan Mattu
32	2123736	Onkar Singh
33	2123737	Parmeet Kaur
34	2123738	Parveen Kaur
35	2123739	Pawandeep Kaur
36	2123740	Prabhjot Kaur
37	2123741	Rahul
38	2123742	Ramandeep Kaur
39	2123744	Ramanpreet Kaur
40	2123745	Ratinderbir Kaur
41	2123747	Rohit
42	2123748	Sanpreet Kaur
43	2123750	Sarojdeep Kaur
44	2123751	Sheweta Thakur
45	2123752	Simarjeet Singh
46	2123753	Simran





47	2123754	Sukhmandeep Kaur
48	2123755	Tanveer Kaur
49	2223694	Akanksha
50	2223695	Ashish
51	2223696	Darpan
52	2223697	Ekampreet
53	2223698	Hritik
54	2223699	Laxmi
55	2223703	Samiksha
56	2223704	Sarabraj
57	2223705	Shubhdeep
58	2223706	Sania
59	2223707	Sukhmanpreet







ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ ਅਤੇ ਟੈਕਨਾਲੋਜੀ  
Khalsa College of Pharmacy and Technology

G.T. ROAD, AMRITSAR 143002

Estd. 2013

e-mail: khalsacopt.asr2013@gmail.com

Web: www.khalsacollegetechnology.org

AFFILIATED TO I.K.G. PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA

Ref. No. KCPT/734-A

Dated 9.3.2023

To

The Medical Director  
Amrit Hospital  
Albert Road  
Amritsar

Subject: Regarding Permission for One Day Visit

Sir/Madam

This is a request letter for one day visit of B.Sc-MLT students of Khalsa College of Pharmacy and Technology, Amritsar in your prestigious institute. The motive of this visit is to boost the technical knowledge of students and to understand the working protocol.

Kindly allow the visit of fifty nine students and facilitate them to visit your institute.

Thanking You.

Regards

  
Director

Khalsa College of Pharmacy & Technology  
Amritsar





# AMRIT HOSPITAL

3, Albert Road, Near Circuit House, Amritsar (Pb.)  
(M) : 81950-58007, 98760-94807

**Dr. Anmol Singh**  
MBBS, FICM, MIMA  
Critical Care Specialist  
PMC : 45887

Dated.....9.3.2023.....

To

The Director  
Khalsa College of Pharmacy and Technology  
Amritsar

Subject: Regarding acceptance of hospital visit

We are pleased to inform you that your request for student visit to our hospital has been accepted on the scheduled day. The visiting hours will be between 10:00-1:00 pm, you are requested to strict to the timings to avoid the inconvenience. We will allow entering students in a batch of 20, because of our working policy. So students will be entertained in groups. We agree that this visit will improve the technical knowledge and helps the students to gain professional identity. Kindly arrange the students into three groups and one faculty member with each group to maintain the decorum.

Regards

Medical Director

AMRIT HOSPITAL AMRITSAR

Dr. ANMOL SINGH  
MBBS FICM MIMA  
(Critical Care)  
Regd No. 45887  
AMRIT HOSPITAL

*Not For Medico Legal Purposes*





Estd. 2013

e-mail: khalsacopt.asr2013@gmail.com

Ph.: 0183-2450215

**ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ ਅਤੇ ਟੈਕਨਾਲੋਜੀ**  
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G.T. ROAD, AMRITSAR 143002

Web: www.khalsacollegegetechnology.org

**AFFILIATED TO I.K.G. PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA**

Ref. No.....

Dated.....

**Circular**

This is for the information to students of B.Sc MLS Sem-4 that a visit to hospital and clinical laboratory has been scheduled on 25<sup>th</sup> March 2023. All students should come in proper uniform and maintain the discipline during the visiting hours of hospital. Any kind of indiscipline will not be tolerated and strict action will be taken against the defaulter. The reporting time will be 9:00 am at main gate of Khalsa College of Pharmacy and Technology, Amritsar.

*[Handwritten Signature]*  
Director





Estd. 2013

e-mail: khalsacopt.asr2013@gmail.com

Ph.: 0183-2450215

**ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ ਅਤੇ ਟੈਕਨਾਲੋਜੀ**  
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Web: www.khalsacollegeotechnology.org

**AFFILIATED TO I.K.G. PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA**

Ref. No.....

Dated.....

**Circular**

This is for the information to all the parents of students of B.Sc MLS Sem-4 that a visit to Asia Diagnostics, Amrit Hospital, Amritsar is scheduled 25<sup>th</sup> March 2023. Kindly send your ward on particular day in proper uniform and asked them to maintain the discipline during the visiting hours of industry. The reporting time will be 9:00 am, kindly be strict to the timings.

Director  
  




# HOSPITAL AND CLINICAL LABORATORY VISIT OF B.Sc MLS SEM-4 STUDENTS



DEPARTMENT OF MEDICAL LAB SCIENCES

KHALSA COLLEGE OF PHARMACY AND TECHNOLOGY, AMRITSAR

BATCH : 2021-22







Latitude: 31.637213  
Longitude: 74.865820  
Elevation: 236.63±1.07 m  
Accuracy: 28.72 m



Latitude: 31.637273  
Longitude: 74.865761  
Elevation: 236.63±1.01 m  
Accuracy: 30.02 m

*[Handwritten Signature]*  
DIRECTOR





COLLEGE OF PHARMACY  
DIRECTOR





*[Handwritten Signature]*  
DIRECTOR





COLLEGE OF PHARMACY & T...  
DIRECTOR  
AL-RITSAR



## CLINICAL LABORATORY/HOSPITAL VISIT REPORT

Educational visit has its own importance in a career of a student who is pursuing a professional degree. It is considered as a part of college curriculum . Students of B.Sc MLS Semester 4<sup>th</sup> (Batch 2021-24), Khalsa College of Pharmacy & Technology, Amritsar visited clinical lab 'NEW ASIA DIAGNOSTICS, AMRIT HOSPITAL, AMRITSAR, on March 25<sup>th</sup>, 2023. Students got detailed demonstration on various clinical instruments and understand the working protocol under the supervision of Dr. Shankini Gambhir, MBBS,M.D. Pathology and Dr. Amritpal Singh,MBBS.

The main objective of clinical lab visit was to provide students an insight of the practical applications of what they are learning with an aim to go beyond academics. It provided students with an opportunity to learn practically through interaction and working methods and to know more about external environment. Educational visit was conducted with an objective of providing students functional opportunity in different sectors.



Photo 1 : Students of B.Sc MLS Sem 4 (Batch 2021)

Students were taken to specialized sections where tests were being performed and got a chance to understand the functioning of all the latest and updated instruments used to perform the analysis. Students were also informed about different types of biomedical waste, their segregation, treatment and disposal procedures.

The students were explained about the protocol of receiving the clinical sample and further labeling and identification procedures. The samples were then processed for analysis in autoanalyzer. Students got detailed demonstration and hands on training on Semi and Fully automated analyzer along with the working of softwares. Lab staff shared their knowledge with the students and explained about the various techniques and processes used in haematological and histopathological analysis as well.







Students were then taken to the Radioimaging Block where they got to know about the imaging techniques such as X-ray machine, CT Scan, MRI Scan (1.5T), ECG and ECHO, ULTRASOUND. Students need those skills for future patient counseling, appropriate ordering of imaging studies, patient safety and professionalism.

The students showed their interests and actively participated in the visit. Dr. Gurpreet Kaur Gill, Assistant Professor, Department of Medical Lab Sciences, Khalsa College of Pharmacy and Technology took the initiative in organizing the educational visit and also accompanied the students along with under the guidance of Dr. R. K. Dhawan. It was an interactive forum for exchange of new knowledge and opportunities for stimulating young minds.

*[Handwritten Signature]*  
KHALSA COLLEGE OF PHARMACY & TECHNOLOGY  
DIRECTOR  
AMRITSAR - 143001



List of B.Sc MLS Sem-5<sup>th</sup> students who completed their Project Work.

Session 2022-23

S.No.	Reg.No.	Name of student	Project Topic	Name of Supervisor
1	2021980	Aishwanpreet singh	Role of bioinformatics in breast cancer	Dr. Narinder Kaur
2	2021981	Aksha	Role of Bioinformatics in Cancer	Dr. Narinder Kaur
3	2021982	Amandeep Singh	Role of bioinformatics in breast cancer	Dr. Narinder Kaur
4	2021983	Amarjot Singh	Lipid Profile	Dr. Narinder Kaur
5	2021985	Arpandeeep singh	Role of bioinformatics in breast cancer	Dr. Narinder Kaur
6	2021987	Baljinder Singh	Polymerase Chain Reaction and Reverse Transcription	Dr. Narinder Kaur
7	2021989	Bobby Singh	Polymerase Chain Reaction and Reverse Transcription	Dr. Narinder Kaur
8	2021990	Dilpreet Singh	Polymerase Chain Reaction and Reverse Transcription	Dr. Narinder Kaur
9	2021991	Eknoordeep singh	Role of Bioinformatics in Cancer	Dr. Narinder Kaur
10	2021994	Gurinder katru	Role of bioinformatics in breast cancer	Dr. Narinder Kaur
11	2021995	Harmandeep kaur	Role of Bioinformatics in Cancer	Dr. Narinder Kaur
12	2021996	Harmandeep Singh	Evolutionary Basis of Sequence Alignment	Dr. Gurpreet Kaur Gill
13	2021997	Husanpreet singh	Bioinformatics and Databases	Dr. Gurpreet Kaur Gill
14	2021998	Jaipreet jawanda	To study the evolutionary relationship through Phylogenetic Analysis	Dr. Gurpreet Kaur Gill
15	2021999	Jannat bhagat	Genomics and Proteomics Techniques	Dr. Gurpreet Kaur Gill
16	2022000	Jashandeeep Kaur	Genomics and Proteomics Techniques	Dr. Gurpreet Kaur Gill
17	2022001	Jasmeen kaur	Bioinformatics and Databases	Dr. Gurpreet Kaur Gill
18	2022003	karandeeep Singh	To study the evolutionary relationship through phylogenetic analysis	Dr. Gurpreet Kaur Gill
19	2022004	Kawalpreet Kaur	To study the evolutionary relationship through phylogenetic analysis	Dr. Gurpreet Kaur Gill
20	2022005	Komalpreet Kaur	Evolutionary Basis of Sequence Alignment	Dr. Gurpreet Kaur Gill
21	2022006	Mahima	Evolutionary Basis of Sequence Alignment	Dr. Gurpreet Kaur Gill





22	2022007	Manbin Kaur	Bioinformatic Databases	Dr. Gurpreet Kaur Gill
23	2022008	Manpreet Kaur JS	Bioinformatics and Complete Blood Cell Count	Dr. Partapbir Singh
24	2022009	Manpreet Kaur GS	Routine Investigation of laboratory tests	Dr. Partapbir Singh
25	2022010	Manpreet Singh	Kidney Dysfunction	Dr. Partapbir Singh
26	2022011	Manseerat Kaur	Breast Cancer	Dr. Partapbir Singh
27	2022012	Meghna grover	Bioinformatics and Complete Blood Cell Count	Dr. Partapbir Singh
28	2022013	Muskan	Kidney Dysfunction	Dr. Partapbir Singh
29	2022014	Namrata	Urinary tract infection	Dr. Partapbir Singh
30	2022015	Navpreet singh	Lipid Profile	Dr. Partapbir Singh
31	2022016	Noor	Breast Cancer	Dr. Partapbir Singh
32	2022017	Pahuldeep kaur	Lipid Profile	Dr. Partapbir Singh
33	2022018	Parneet randhawa	Role of bioinformatics in breast cancer	Dr. Partapbir Singh
34	2022019	Pawanpreet	Lipid Profile	Mr. Stalinjit Singh
35	2022020	Prabhjeet Kaur	Bioinformatics and Lipid Profile	Mr. Stalinjit Singh
36	2022021	Prerna	Lipid Profile	Mr. Stalinjit Singh
37	2022022	Rajveer Singh	Routine Investigation of laboratory tests	Mr. Stalinjit Singh
38	2022023	Ramanjot Kaur	Routine Investigation of laboratory tests	Mr. Stalinjit Singh
39	2022024	Ramanpreet Kaur	Routine Clinical Investigation	Mr. Stalinjit Singh
40	2022025	Ramesh kumar	Leukemia	Mr. Stalinjit Singh
41	2022027	Rohit Sharma	Bioinformatics and Clinical Laboratory Tests	Mr. Stalinjit Singh
42	2022028	Sanjampreet Kaur	Gall Bladder Cancer	Mr. Stalinjit Singh
43	2022029	Sanjana	Routine Investigation of laboratory tests	Mr. Stalinjit Singh
44	2022031	Simranjeet Kaur	Lipid Profile	Mr. Stalinjit Singh
45	2022033	Vishaldeep Singh	Bioinformatics and Lipid Profile	Mrs. Juhi Kataria
46	2022034	Yashpreet kaur	Role of Bioinformatics in Cancer	Mrs. Juhi Kataria
47	2123759	Aditya	Quality assurance	Mrs. Juhi Kataria
48	2123760	Anureet	Quality Assurance	Mrs. Juhi Kataria
49	2123761	Arun	Bioinformatics and Flow Cytometry	Mrs. Juhi Kataria





50	2123763	Harjot	Diabetes mellitus	Mrs. Juhi Kataria
51	2123764	Harkanwar	Quality Assurance	Mrs. Juhi Kataria
52	2123765	Jaskirat	Role of Bioinformatics in Cancer	Mrs. Juhi Kataria
53	2123767	Mani masih	Role of Bioinformatics in Cancer	Mrs. Juhi Kataria
54	2123768	Manpreet JS	Role of Bioinformatics in Cancer	Dr. Charanjit Kaur
55	2123769	Manpreet MS	Serological analysis of dengue in clinical laboratory	Dr. Charanjit Kaur
56	2123770	Navpreet	PCR and RT-PCR	Dr. Charanjit Kaur
57	2123771	Nidhi	Serological analysis of dengue in clinical laboratory	Dr. Charanjit Kaur
58	2123772	Prabhdeep	Role of bioinformatics in automation of clinical laboratory	Dr. Charanjit Kaur
59	2123773	Sandeep kaur	Serological analysis of dengue in clinical laboratory	Dr. Charanjit Kaur
60	2123774	Sandeep singh	PCR and RT-PCR	Dr. Charanjit Kaur
61	2123775	Shivam	Role of bioinformatics in automation of clinical laboratory	Dr. Charanjit Kaur
62	2123776	Simrandeep	Role of bioinformatics in automation of clinical laboratory	Dr. Charanjit Kaur
63	2123777	Vishaldeep	Clinical Investigation of routine tests	Dr. Charanjit Kaur





**TO STUDY THE EVOLUTIONARY RELATIONSHIP THROUGH  
PHYLOGENETIC ANALYSIS**

**MINOR PROJECT**

**SUBMITTED TO**

**KHALSA COLLEGE OF PHARMACY AND TECHNOLOGY  
FOR THE PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF  
BACHELOR OF SCIENCE**

**IN**

**MEDICAL LABORATORY SCIENCE**

**2020-2023**



**KARANDEEP SINGH**

**REGISTRATION NO. 2022003**

**SUPERVISED BY:**

**DR. GURPREET KAUR GILL**

**(Assistant Professor)**

**DEPARTMENT OF MEDICAL LABORATORY SCIENCES  
KHALSA COLLEGE OF PHARMACY AND TECHNOLOGY  
AMRITSAR-143001 (PUNJAB)( 2022)**

*[Signature]*  
Director  
Khalsa College of  
Pharmacy & Technology  
Amritsar.



**EVOLUTIONARY BASIS OF SEQUENCE  
ALIGNMENT**

**MINOR PROJECT**

**SUBMITTED TO  
KHALSA COLLEGE OF PHARMACY & TECHNOLOGY  
FOR THE PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF**

**BACHELOR OF SCIENCE**

**IN**

**MEDICAL LABORATORY SCIENCE**

**2020-2023**



**SUBMITTED BY:  
MAHIMA  
(REGISTRATION NO. 2022006)**

**SUPERVISED BY:  
DR. GURPREET KAUR GILL  
(Assistant Professor)**

**DEPARTMENT OF MEDICAL LABORATORY SCIENCES  
KHALSA COLLEGE OF PHARMACY AND TECHNOLOGY  
AMRITSAR-143001 (PUNJAB)**

*Director,  
Khalsa College of  
Pharmacy & Technology  
Amritsar.*



**POLYMERASE CHAIN REACTION (PCR) & REVERSE TRANSCRIPTION**

**POLYMERASE CHAIN REACTION (RT-PCR)**

**MINOR PROJECT REPORT**

**SUBMITTED TO:**

**KHALSA COLLEGE OF PHARMACY & TECHNOLOGY AMRITSAR (INDIA)**

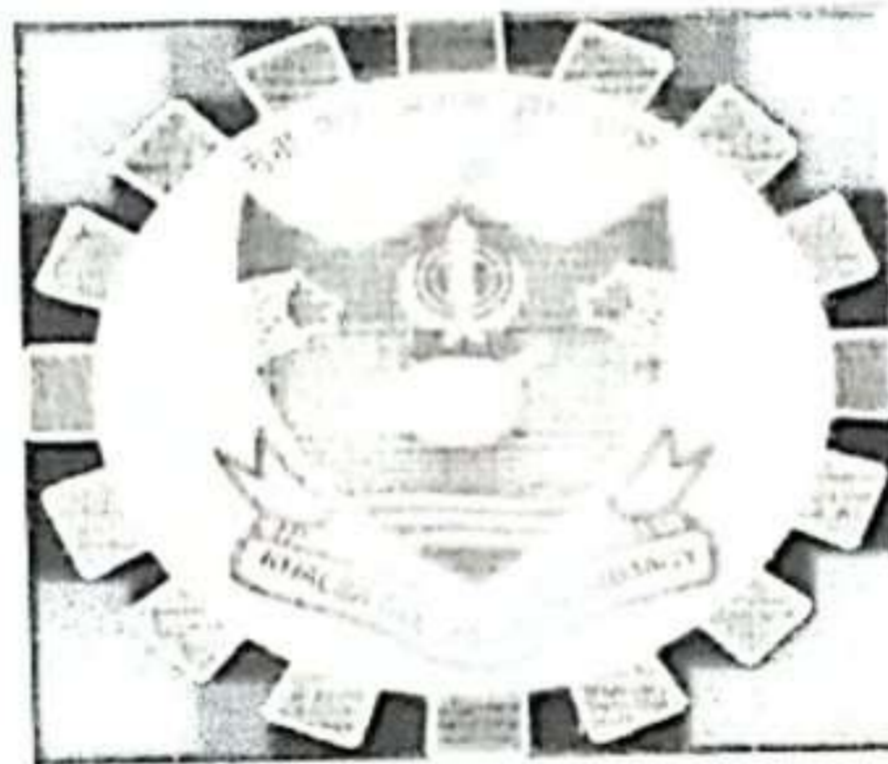
**FOR THE PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF**

**BACHELOR OF SCIENCE**

**IN**

**MEDICAL LABORATORY SCIENCE**

**(5TH SEM)**



**SUBMITTED BY:**

**DILPREET SINGH**

**REGISTRATION NO. 2021990**

**SUPERVISED BY:**

**DR. NARINDER KAUR**

**DEPARTMENT OF MEDICAL LABORATORY SCIENCE KHALSA COLLEGE OF  
PHARMACY AND TECHNOLOGY AMRITSAR 143001 (PUNJAB) 2020-2023**

*hkm*  
Director

Khalsa College of  
Pharmacy & Technology  
Amritsar.



List of M.Sc MLS (Biochemistry) Sem 4<sup>th</sup> students (Batch 2021-23) who completed Dissertation Work (MMLT401-18)

Session : 2022-23

S.No.	Name of student	Reg.No.	Project Topic	Name of Supervisor
1	Gomti Bala	2123779	Urinary Tract Infection in Immuno-Compromised Patients and its effect on Renal Function	Dr. Partapbir Singh
2	Karanbir Singh	2123780	Comparative Study of Lipid Profile Anomalies in Thyroid Dysfunction	Dr. Charanjit Kaur
3	Manraj Singh	2123781	Effect of Hyperglycemia on Haematological Indices in Type 2 Diabetes Mellitus	Dr. Gurpreet Kaur Gill
4	Poonamdeep Kaur	2123782	Correlation of Estrogen with Bone Parameters in Women of Different Age Groups	Dr. Narinder Kaur





**URINARY TRACT INFECTION IN IMMUNO-  
COMPROMISED PATIENTS AND ITS  
EFFECT ON RENAL FUNCTION**

**THESIS**

**SUBMITTED TO**

**I.K GUJRAL PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA**

**FOR THE PARTIAL FULFILMENT OF THE**

**REQUIREMENTS FOR THE DEGREE OF**

**MASTER OF SCIENCE**

**IN**

**MLS (BIOCHEMISTRY)**



**SUBMITTED BY**

**GOMTI BALA**

**REGISTRATION NO: 2123779**

**SUPRIVISED BY**

**DR. PARTAPBIR SINGH**

**(Assistant Professor)**

**DEPARTMENT OF MEDICAL LABORATORY SCIENCES  
KHALSA COLLEGE OF PHARMACY AND TECHNOLOGY,  
AMRITSAR-143002**

**2023**







# ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ ਅਤੇ ਟੈਕਨਾਲੋਜੀ Khalsa College of Pharmacy and Technology

G.T. ROAD, AMRITSAR 143002

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AFFILIATED TO I.K.G. PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA

Ref. No. KC PT / 4031

Dated 23-8-2023

## CERTIFICATE

This is certify that the work contained in this thesis entitled "URINARY TRACT INFECTION IN IMMUNO-COMPROMISED PATIENTS AND ITS EFFECT ON RENAL FUNCTION", 'submitted to I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA (PUNJAB) for the partial fulfilment of the requirements for the award of degree of Master of Science in MLS (Biochemistry) embodies the original research work carried out by Ms. GOMTI BALA (Reg no. 2123779) herself under my supervision and guidance at the Department of Medical Laboratory Science, Khalsa College of Pharmacy and Technology, Amritsar. The work has not been submitted in part or full for the award of any other diploma or degree in any university / institute.

Supervisor

**Dr. Partapbir Singh**

Assistant Professor

Khalsa College of Pharmacy & Technology

Amritsar, Punjab, 143001

*Forwarded & Recommended*

Forwarded By

**Dr. R.K Dhawan**

Director

Khalsa College of Pharmacy & Technology

Amritsar, Punjab, 143001







Estd. 2013

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ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ ਅਤੇ ਟੈਕਨਾਲੋਜੀ  
**Khalsa College of Pharmacy and Technology**  
 G.T. ROAD, AMRITSAR 143002

AFFILIATED TO I.K.G. PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA

Ref. No. KCPT/4017

Dated. 14.8.2023

**CERTIFICATE**

This is certify that the work contained in this thesis entitled "COMPARATIVE STUDY OF LIPID PROFILE ANOMALIES IN THYROID DYSFUNCTION", submitted to I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA (PUNJAB) for the partial fulfilment of the requirements for the award of degree of Master of Sciences in MLS Biochemistry embodies the original research work carried out by Mr. Karanbir Singh Waraich (Reg. no.2123780) himself under my supervision and guidance at the Department of Medical Laboratory Sciences, Khalsa College of Pharmacy and Technology, Amritsar. The work has not been submitted in part or full for the award of any other diploma or degree in any university/institute

*Charanjeet Kaur*

(Supervisor)

Dr. Charanjeet Kaur

Assistant Professor

Khalsa College of Pharmacy & Technology

Amritsar, Punjab, 143001

*Dr. R.K. Dhawan*

Forwarded By

Dr. R.K. Dhawan

Director





**EFFECT OF HYPERGLYCEMIA ON  
HEMATOLOGICAL INDICES IN TYPE  
2 DIABETES MELLITUS**

**THESIS  
SUBMITTED TO  
IKG PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA (PUNJAB)  
IN THE PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF DEGREE OF  
MASTER OF SCIENCE  
IN  
MLS (BIOCHEMISTRY)**



**SUBMITTED BY  
MANRAJ SINGH  
REGISTRATION NO. 2123781**

**SUPERVISED BY:  
DR. GURPREET KAUR GILL**

**DEPARTMENT OF MEDICAL LABORATORY SCIENCES  
KHALSA COLLEGE OF PHARMACY AND TECHNOLOGY  
AMRITSAR-143001 (PUNJAB)  
2023**







# ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ ਅਤੇ ਟੈਕਨਾਲੋਜੀ

## Khalsa College of Pharmacy and Technology

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Estd. 2013

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Web: www.khalsacollegeotechnology.org

AFFILIATED TO I.K.G. PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA

Reg. No. KCPT/4026

Dated 22.8.2023

### CERTIFICATE BY THE SUPERVISOR

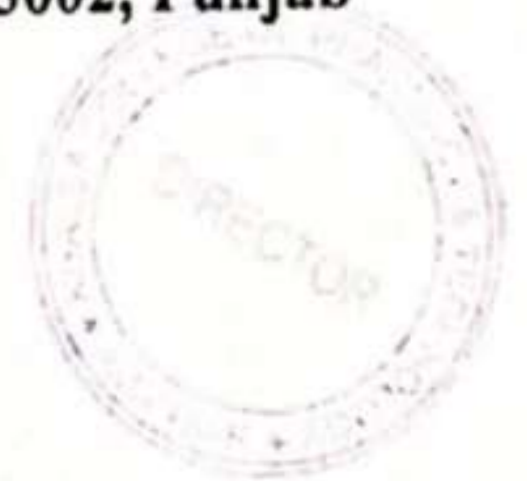
This is certify that the work contained in this thesis entitled "EFFECT OF HYPERGLYCEMIA ON HEMATOLOGICAL INDICES IN TYPE 2 DIABETES MELLITUS", submitted to I.K. GUJRAL PUN JAB TECHNICAL UNVERSITY, KAPURTHALA (PUNJAB) for the partial fulfilment of the requirement for the award of degree of Master of Science in MLS (Biochemistry) embodies the original research work carried out by Mr. Manraj Singh (Reg No.2123781) himself under my supervision and guidance at the Department of Medical Laboratory Sciences, Khalsa College of Pharmacy and Technology, Amritsar. The work has not been submitted in part or full for the award of any other diploma or degree in university / institute.

*Gurpreet Kaur Gill*  
21/8/2023  
Supervisor  
Dr. Gurpreet Kaur Gill  
Assistant Professor  
Khalsa College of Pharmacy & Technology  
Amritsar-143002, Punjab

*Recommended & forwarded for  
award of degree of MSc, MLS*

*R.K. Dhawan*  
21/8/23

*R.K. Dhawan*  
Forwarded By  
Dr. R.K Dhawan  
Director  
Khalsa College of Pharmacy & Technology  
Amritsar-143002, Punjab





**CORRELATION OF ESTROGEN WITH  
BONE PARAMETERS IN WOMEN OF  
DIFFERENT AGE GROUPS**

**THESIS  
SUBMITTED TO  
I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY,  
KAPURTHALA (PUNJAB)  
FOR THE PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF  
MASTER OF SCIENCE  
IN  
MLS (BIOCHEMISTRY)**



**SUBMITTED BY  
POONAMDEEP KAUR  
REGISTRATION NO. : 2123782**

**SUPERVISED BY  
Dr . NARINDER KAUR  
(Associate Professor)**

**CO-SUPERVISED BY  
Mrs. JUHI KATARIA  
(Assistant Professor)**

**DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY  
KHALSA COLLEGE OF PHARMACY AND TECHNOLOGY,  
AMRITSAR-143002**

**2023**







ਖਾਲਸਾ ਕਾਲਜ ਆਫ ਫਾਰਮੇਸੀ ਅਤੇ ਟੈਕਨਾਲੋਜੀ  
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G.T. ROAD, AMRITSAR 143002

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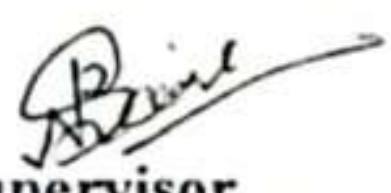
AFFILIATED TO I.K.G. PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA

No. KCPT/4030

Dated 23.8.2023

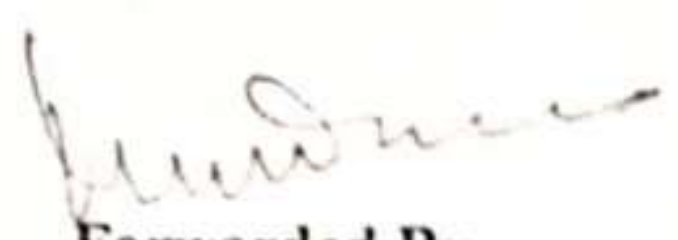
### CERTIFICATE BY THE SUPERVISOR

This is certify that the work contained in this thesis entitled "CORRELATION OF ESTROGEN WITH BONE PARAMETERS IN WOMEN OF DIFFERENT AGE GROUPS", submitted to I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY, KAPURTHALA (PUNJAB) for the partial fulfilment of the requirements for the award of degree of Master of Science in MLS Biochemistry embodies the original research work carried out by Ms. POONAMDEEP KAUR (Regd. No. 2123782) herself under my supervision and guidance at the Department of Medical Laboratory Science, Khalsa College of Pharmacy and Technology, Amritsar. The work has not been submitted in part or full for the award of any other diploma or degree in any university/institute.

  
Supervisor  
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The thesis is self-sufficient and fit for submission for the award of M.Sc (MLS) Biochemistry.

  
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