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Hashu Advani Complex, Near Collector's Colony, Chembur (E) Mumbai 400074

Field Work
2022-23

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Introduction- Industrial Visit to Abhyankar Ayurvedic Product Pvt Ltd, Pali Road, Jambhulpada, Maharashtra

Industrial Visit of Herbal Drug Technology Practice school was arranged to Abhyankar Ayurvedic Product Pvt Ltd, Pali Road, Jambhulpada, Maharashtra on 30th September, 2022. A total of 22 students from Herbal Drug Practice school and 4 faculties visited there.

It is accessible from Khopoli station by road. It is an ayurvedic manufacturing plant and manufactures a wide range of Ayurvedic formulations such as Churna, Vati, Bhasma, Kalpa (Formulations of gold, mercury, and other metals), Parpati, sheerpak, etc. For this they refer Charaka Samhita (चरक संहिता), Sushruta Samhita (सुश्रुतसंहिता), Vadmaya (वाङ्मय)

All the ingredients are formulated as specified in the books. As metals and some other materials that are used in the formulation are toxic in nature their purification process is also done in the plant. It is a medium scale manufacturing plant and has nursery and goshala as well. In the industrial visit we were explained the procedures of ayurvedic formulations in detail by Mr. Abhyankar. He also shown all the equipments and processes of the formulations that were being prepared on the plant at that time. He also shared some additional information later pertaining to Vaat Vyadhi (वातव्याधी) and concept of Sapt Dhatu (सप्तधातु)

He also explained the lifestyle (eating habits, sleep schedule, etc) that human beings should follow according to Ayurveda and the scientific reasons behind it. He also urged to students to read the Sutrasthaan (सूत्रस्थान) of Charak samhita for more insights!!

Abhyankar Ayurvedics

Purification of nux vomica

Kupilu Shodhana – Purification method

Skin of seeds is removed. It is boiled in milk for 7 days. Dried and then it is fried in ghee and powdered.

Ayurvedic classics explain the method of purification for seeds of nux vomica and it is as follows

The seeds are wrapped in a cotton cloth and a bundle is made. These seeds are then dipped in cow's milk and boiled for three hours (the device is known as dola yantra as per Rasashastra). After 3 hours of boiling the seeds are crushed and outer skin is removed. Once again the seeds are boiled in cow's milk. The procedure is repeated 7 days. There after these purified seeds are fried with ghee and powdered and stored.

Some folk healers (even traditional practitioners of North India) fry the seeds with castor oil and use it.

Purification of aconite

Purification procedure - Vatsanabha Shodhana

One among the following method is followed for detoxification of Vatsanabha.

1. Aconitum ferox root is tied in a piece of cloth, kept dipped in cow urine. It is exposed to sunlight for three days. Each day, cow urine is replaced with fresh one. After third day, it is dried and preserved.
2. Aconitum ferox roots are made into pieces, tied in a piece of cloth, suspended in goat milk or cow milk, and heated for three hours.
3. Vatsanabha kept dipped in cow urine for three days, gets purified.
4. Vatsanabha is boiled by suspending it in Triphala decoction for three hours.

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Dosha (impurities) of *Parada* are

1. *Naisargika Doshas* (natural impurities),
2. *Yougika Doshas* (physical impurities),
3. *Aoupadika Doshas* (chemical impurities in the form of coating).

Types of *Shodhana* (purification) explained are

1. *Samanya Shodhana* (general purification method),
2. *Vishsha Shodhana* (specific method of purification)

Drugs mentioned for *Samanya Shodhana* of *Parada*:

Parada Shodhana has to be carried out for 3 to 7 days, in any of the following drugs to get rid of *Parada doshas*. *Sudha* (lime powder), *Lashoona*, *Saindhava*, *Gritakumari Swarasa*, *Chitraka kwatha*, *Rakta Sarshapa*, *Bhrahati kwatha*, *Triphala kwatha*, *Nagavalli Swarasa*, *Ardra Swarasa*, *Yavakshara*, *Tankana*, *Sarjikshara*, *Haridra*, *Ishtika chuma* etc.

MATERIAL AND METHODS

Type of procedure adopted was *Mardana* (trituration).

Equipments required were stone mortar and pestle, vessel, cloth & spatula.

Method for purification of mercury

Parada was triturated with *Lasuna* and *Saindhava Lavana* on a *Khalva yantra*. Washing of garlic paste was done with lukewarm water. *Parada* was triturated with *Nagavalli Swarasa*, *Ardra Swarasa*, *Ksharatraya*, *chitrak* and washed with water. The *Parada* which was extracted by *Urdhwa Patana Vidhi* from *Hingula* is devoid of *Sapta Kanchuka Dosha* was subjected to *Shodhana*. *Haridra Churna* and *Nimbu Swarasa* was taken in a porcelain dish and triturated. After drying, it was filtered through four folded cloth and *Parada* was procured.

The collected mercury is the purified mercury which was weighed and stored in a glass/plastic bottle

Benefits of Mercury

Mercury is said to be imbued with the 6 tastes, and capable of removing derangements of all the humours. It is the first of alterative tonics. Combined with other appropriate medicines it cures all diseases, acts as a powerful tonic and improves the vision and complexion.

Purification of Datura

Dhattura Shodhana - Purification method for seeds of Dhatūra -

Dhatūra seeds are taken in a clean cloth. Tied in the form of suspending pack. It is suspended and kept dipped in a vessel containing cows milk. This setup is called as Dola Yantra. It is boiled in cows milk for 1 Prahara (3 hours). This procedure is called as Swedana. After 3 hours, the seeds are washed in hot water, dried and preserved.

Ref:easyayurveda.com

Purification of mercury

In ancient literature Rasashastra, *Rasa* or *Parada* (Mercury) has been described to be of divine origin. The importance of *Parada* (mercury) in Rasa texts is mentioned for *Rasa Chikitsa*. In Rasashastra the process of *Shodhana* is having a greater importance hence wide range of purification methods are described for each metal & minerals including *Parada* (mercury). The literary meaning of '*Shodhana*' is purification but in Rasashastra *Shodhana* is a *Samskara* (process or procedure) which essentially brings out modifications or alteration in properties along with removal of impurities from the metal or mineral. Present study deals with the purification of *Parada* (mercury) mentioned in the classics making it therapeutically potential.

In Rasashastra the process of *Shodhana* is having a great importance and hence a wide range of purification methods are described for each metal & mineral as well as for *Visha* and *Upavisha* (toxic substances). Even though the literary meaning of '*Shodhana*' is purification but in Rasashastra *Shodhana* is a *Samskara* (process or procedure) which essentially brings out modifications or alteration in properties along with purification. The process which eliminates the blemishes is called *Shodhana*; it is by implementing prescribed methods like trituration etc., with prescribed drugs.¹ It reduces the toxic effect, eradicate physical and chemical impurities. It enhances therapeutic value of the drug, converting the material for further processing like *Marana* (incineration).

Mercury is considered as a heavy metal containing various impurities and causes toxic and adverse effect to the body hence purification of such metal is must. The

varieties of mercury based on colour are listed in table 1

Variety	Colour	Impurities	Uses
<i>Rasa</i>	<i>Rakta</i>	Which is free from all types of impurities	<i>Rasayana</i>
<i>Rasendra</i>	<i>Shyava</i>	Free from impurities	<i>Rasayana</i>
<i>Parada</i>	<i>Shweta</i>	With impurities	<i>Sarva Rogahara</i>

DIAMOND (HIRAKA) BHASMA:

Heerak Bhasma, also known as Hira Bhasma, Vajra Bhasma, Hira Bhasma, or Diamond Bhasma is an ayurvedic preparation obtained from purified diamond ash.

Deemed as one of the most precious gemstones, diamonds not only look spectacular when carved into jewellery but also speak of sheer elegance and beauty. Diamonds are solid form of the element carbon. Under extreme high temperature and pressure far below the earth's surface, the carbon atoms bond in a unique way that results in diamond's beautiful and rare crystalline structure, which is further embellished to make extra-ordinary pieces of jewellery that sparkles with radiance. But apart from being a timeless, elegant, and stunning piece of art, there is more to a diamond than what meets the eye! Be it used as a beauty ingredient for enhancing skin health or as an herbal compound for promoting health, diamond is the answer to all.

Well, this ayurvedic formulation of diamond known as Heerak Bhasma is extensively used for correcting the imbalance caused due to the Tridoshas, mainly Vata, Pitta and Kapha. Imbued with powerful cardioprotective, aphrodisiac, immunomodulatory, anticancer, adaptogenic, antioxidant, antimicrobial, and rejuvenative properties, it is used in the treatment and management of internal abscess, cancer, tumor, diabetes, obesity, infertility, fistula, urinary problems, vertigo, angina pectoris, tuberculosis, anemia, rheumatoid arthritis and other inflammatory conditions. Being a potent immunomodulatory agent, it also strengthens the mind and calms the body. Furthermore, it improves longevity, quality of life and increases overall strength and mental stamina.

Types

Diamond is chiefly categorized in to four types, mainly, white, red, yellow and black. According to ayurvedic scriptures, the diamond which is more-or-less round in size and possess high gloss is termed as male. The white colored diamond is mainly suggested for internal administration, whereas the black and red-colored variety is significant in case of several health conditions and even prevents premature death of babies. The yellow-colored type is mainly used for providing strength.

Chemical Composition of Heerak Bhasma:

It mainly contains carbon, iron and oxygen. But other essential elements that are present in moderate quantity include sodium, magnesium, potassium, calcium, chromium, aluminum, silicon, phosphorus, and sulfur. This ayurvedic herbo-mineral compound is partly soluble in water and sparingly soluble in organic solvents like chloroform and methanol.

Ingredients:

- Purified Heerak or Diamond
- Purified Sulphur or Gandhaka
- Rasa Sindhura

Method:

- Take finely powdered diamond nano particles and equal quantities of both gandhaka and rasa sindhura.
- Take all three in a mortar pestle and ground well till it becomes fine powder.
- Place it in a closed container and heat it in the absence of air.
- Allow the mixture to cool down on its own.
- Repeat the above process 14 times to get pure quality of Heerak Bhasma.
- Health Benefits Of Heerak Bhasma

USES:

- Promotes Cardiac Functioning
- Treats Metastasis
- Relaxes The Mind
- Reduces Pain And Inflammation

Dosage:

The effectual therapeutic dosage of Heerak Bhasma may vary from person to person depending upon the age, body strength, digestive power of the patient, severity, and condition of the patient. It is firmly recommended to consult an ayurvedic doctor or practitioner as he or she would evaluate the patient's indications, past medical conditions and prescribe an effective dose for a specific period.

Adults: 10 mg, along with milk mixing with Misri (sugar crystal) powder or other adjuvants like with butter, ghee, milk or honey twice a day, after meals or as suggested by the health care provider. But ensure that the maximum dosage doesn't exceed 16 mg per day.

Side Effects:

Heerak Bhasma is extremely beneficial in proper therapeutic dosage and does not have any reported side effects. But if the formulation is taken in excess quantity or used without proper purification, it can cause gastritis. Self-medication is highly contradicted.

Conclusion:

Heerak Bhasma has been mentioned in several ayurvedic scriptures as an ultimate remedy for several cardiac anomalies, and anemia owing to its enormous therapeutic properties. This incredible herbo-mineral formulation is classified as a potent cardiogenic, aphrodisiac, and immunomodulatory, and hence used for the treatment and management of infertility, insomnia, diabetes, obesity and thus improves overall stamina and body immunity.

Swarna Bhasma

Suvarna Bhasma is one of the ancient powdered Ayurvedic formulations prepared from pure gold. The metals/minerals used in Bhasma preparations are subjected to a detoxification process, thereby making them bio-compatible with strict adherence to a textual reference and thus allowing an efficacious and safe medicine to be delivered.

Bhasmas commonly integrate metals and minerals into herbal formulations, which is usually done for their endorsed medicinal properties and enhanced potency as defined by the world health organization (WHO). Metals, such as copper, iron, mercury, lead, and arsenic, are used in Ayurvedic therapeutics and are known to play important roles in biochemical processes. In spite of the known evidence regarding the beneficial effects of Bhasmas, i.e., better healing and potency, many details regarding the interactions of Bhasmas with biological systems are still not known.

Method of preparation:

Suvarna Bhasma, an Ayurvedic formulation manufactured as per Bharat Bhaishajya Ratnakar 5/8357 (BBR).

As per Ayurved, different methods can be used for preparing Suvarna Bhasma: Ariloha marit, Parad marit, Vanaspati marit and Gandhak marit. These different methods yield the same Bhasma, but with different physico-chemical properties.

- Shuddha Suvarna (purified gold) and Shuddha Parada (purified mercury) were triturated in a Khal (instrument used for trituration) to form an amalgam, and a bolus of the amalgam was prepared.
- In a Sharav (earthen crucible), Erand Patra (Castor Leaf) was placed. Then, the bolus was placed with Shuddha Gandhak (purified sulphur) in equal proportions. Over this, another Erand Patra (Castor Leaf) was placed and covered with another Sharav (earthen crucible).
- The joined Sharav (earthen crucible) was sealed with a mud-smear cloth, the assembly is known as "Sharav Samputa".
- The assembly was placed in a Kukkut Puta Bhatti (calcination furnace) using about 30 cow-dung cakes in a 4-tier bed.
- The Bhatti (furnace) was allowed to cool on its own, which normally took three hours.
- The process was repeated 13 more times (Total: 14 times), which included heating with Shuddha Gandhak (purified sulphur) and cooling to obtain a fine homogenous powder.
- Further, the Bhasma was taken in a Khal (instrument used for trituration) and triturated with Korphad (Aloe vera) juice until the mixture was homogeneous, after which it was dried at a temperature not exceeding 70°C.

Uses:

Suvarna Bhasma has a unique place in the Ayurvedic system of medicine. It is an integral part of Ayurved, which describes its usage for the treatment of patients with various chronic disorders, such as

- rheumatoid arthritis
- anemia

- cough
- nervous diseases.
- It is known for its anti-aging properties, and it acts as Rasayan, Balya, and Ojovardhak in Jeerna Vyadhi.

Conclusion:

We were fortunate enough to see and experience the process of the Swarna bhasma (not everything but the tituration part). It was a great experience to see the manufacturing unit and the various processes.

Tituration Process:



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Pulverization

Pulverization is the process of applying an external force to a (solid) material of a certain size to destroy it and reduce it into pieces that are smaller than the original size.

Pulverization has long been done for many materials, including ore, glass, ceramics, grains, paints, and medicines.

Objective of pulverization

- (1) Pretreatment for separation of active ingredient
- (2) Production of powder with particle size suitable for the purpose and equalization of particle size
- (3) Increase surface area to enhance reactivity (increase reaction rate and mass transfer rate)
- (4) Surface modification of particles
- (5) Formation of particle composites
- (6) Mechanical alloying, amorphization
- (7) Preparation of desired particle shape
- (8) Pretreatment for material synthesis

Recently, these have become important purposes of pulverization.

Method of pulverisation

There are two types of particle destruction in the pulverization process, "surface grinding" and "volume grinding".

In surface grinding, small pieces separate from a particle surface, gradually forming a large number of fine particles.

In the case of volume grinding, crushing occurs not at the particle surface but in the whole part. The particle is broken up into several pieces, and this process continues until the particle gradually turns into fine particles.

Classification of pulverization operation	Size of pulverized material (ground particle size)
Crushing	Meter order → 10cm or less
Medium crushing	10cm → 10mm or less
Pulverization / (fine grinding / milling)	1mm → 10µm or less
Ultrafine grinding	10µm → 1µm or less

There are various classifications of pulverization operation. Pulverization may be classified into rough, medium, small crushing, coarse, fine, and ultrafine grinding.

"Fine pulverization" was defined as 80-90% finer than No. 4, and "coarse pulverization" meant that all the samples passed through 25 mm and only 40% was finer than No. 4. Average pulverization was between these two limits.

Types of pulverization

1. Compression pulverization

Two working surfaces approach each other slowly, pressurize an object uniformly, and crush it. Large hard objects are reduced into small pieces. It is used for rough pulverization.

2. Impact (collision) pulverization

A high-speed impactor (such as a hammer or a ball) instantaneously impacts a solid object, or objects collide with each other at high speed to cause crushing. This process is used for pulverization into medium- and small-sized objects (10 cm or less).

3. Shear pulverization

An object is cut into small pieces by a wedge, such as a cutter. It is suitable for pulverizing fragile objects.

4. Friction grinding (pulverization by friction)

An object is caught between two or more working surfaces that move relative to each other. The movement of the working surfaces produces friction between the object and the working surfaces, and small pieces are scraped off from the object surface one after another. By applying compressive force and shear force to particles frictionally, fine powder is gradually produced from the particle surface. Therefore, it is suitable for ultra-fine pulverization.

Trituration

Trituration is the name of several different methods used to process materials. In one sense, it is a form of comminution. In another sense, it is the production of a homogeneous powdered material by mixing and grinding component materials thoroughly.

Mixing of pharmaceutical powder is a unit operation that serves to make two or more components uniformly distributed in the powder bed. In most cases, solid dosage forms do not only contain one component. Several ingredients are combined together to serve different and specialized pharmaceutical purposes during manufacture, storage, or use.

For instance, a tablet formulation often consists of the drug substance and many other excipients, such as binders, bulking agents, disintegrants, lubricants, glidants, etc. As a result,

the mixing process is necessary to ensure that the active pharmaceutical ingredient (API) and other components are homogeneously distributed throughout the tablet.

Amritamehari churnam

Amritamehari churnam is an Ayurvedic medicine in herbal powder form used for the treatment of diabetes.

Amritamehari Churnam is an antidiabetic and antihyperglycemic medicine used in Ayurveda. It normalizes the blood glucose level, stimulates insulin release from the beta cells in the pancreas and prevents diabetic complications. Furthermore, it reduces low-density cholesterol and improves overall lipid profile. It also helps to reduce symptoms of diabetes. It mainly reduces polyuria (excessive urination) and glycosuria (excess sugar excretion in the urine).

Giloy (Amrita) – Tinospora Cordifolia	16.66%
Gurmar (Gudmar or Meharimula) – Gymnema Sylvestre	50%
Amalaki Churna – Emblica Officinale	16.66%
Haldi Churna (Turmeric Powder)	16.66%

The main ingredient of Amrita Mehari Churna is Gurmar, which is well-known anti-diabetic herb. Other herbs in the formulation are supportive herbs that help to enhance the antidiabetic action of Gurmar.

Amritamehari Churnam exhibits the following medicinal properties:

- Anti-diabetic
- Antihyperglycemic
- Antioxidant
- Insulin sensitizer
- Pancreas stimulant

SL.NO	SANSKRIT NAME	ENGLISH/LATIN	ACTION
1	AMRITA (GILOY)	Tinospora cordifolia	Balances vata , pitta dosha
2	MEHARIMULA	Gymnema sylvestre	Relieves diabetes
3	HARIDRA	Curcuma longa	Antibacterial action
4	DHATRI	Indian goose berry / Emblica officinalis	Rejuvenator

Putas in Ayurveda (Muffle furnace)

Putas is a system of heating that gives an understanding of how much paka (heating) is required for a particular metal or mineral for its conversion into ashes, during putapaka. In this process, successive putas are given till the proper fineness & bhasma quality are obtained. As only measured heating is always recommended for achieving desired medicinal products, neither more nor less heating is desirable.

The decision over number of putas to be applied largely depends on the nature of drug (hardness, density, melting point etc) subjected for putas. In general, the ancient authors recommend 10-100 putas for many rasa dravya for their purification or for incineration. In case of Lauha bhasma 10 to 100 putas are advised to make the bhasma, for Vajikaran karma 10 to 500 putas and 100 to 1000 putas are advised to make the bhasma fit for Rasayana karma.

Drug with less hardness may require only one putas. The calcium compounds like Sankha, shukti, kaparda require three putas for their incineration. Whereas, the gold, copper and other such metals require up to 40 putas for better incineration.

Aim & objects

- To provide a particular temperature pattern (no less or more heating).
- Reduction in particle size.
- To provide a suitable atmosphere for desirable chemical reaction.
- To make the material ductile, smooth & homogenous.
- To potentiate the material for therapeutic purposes.
- To make the material absorbable, colloidal, adaptable & assimilable form.
- Putas generates following properties into the bhasmas doshavinasha, gunaprakarsha, niruthatva, dipana, varitaratva,

apunarbhava, laghutva, shighravaypti, more effective than jaritaparada, rekhapurnatwa, vichitragunadipti etc6.

Classification of puta

According to the source of heat:

1. Agni puta: paka through fire.
2. Surya puta: paka through sun Rays.
3. Chandra puta: paka through moon Rays.

Chandra and Surya Puta depend on the natural source of energy. i.e. on sun rays and moon rays.

1. Chandraputa: In Chandraputa the drug material to suitable bhavana with specified liquid then placed daily night under moon light. According to Rasatantrasara. Chandra puta is explained for Praval Bhasma also known as samskar vishesha.

2. Suryaputa: Also known as Rudra / Bhanu Puta. After bhavna subjected to Sunlight. Paka takes place due to sun rays Praval Bhasma. Examples – Silajatu sodhana and Bhanupak for loha churna.

3. Agni puta: depending upon Agni (Fire). For more (Atitivra): Mahaputa etc. For moderate(Madhyam): Gajaputa, Kukutaputa etc For less (Manda or Atimanda) : Laghuputa etc.

Classification according to the dimensions of Puta:

a. Mahaputa: Total no of Cow Dung: 1500(750+750). According to Sharangdhara and vanyopala used for Tamra, Parada, Suvrna,Vajra and Trivanga Bhasma.

b. Gajaputa: Ground should be flat and dry. Total no. of Cow Dung Used: 1000 (500 + 500). Used for Akika, Abhraka, Rajata,Yashada, Loha, Suvarna, Vajra, Hartala, Godanti, Trivanga bhasma.

c. Ardthagajaputa: Mentioned in different Rasa text book, rya Yadavji clearly explained about Ardthagajaputa for the marana of Tamra and Vanga. (45.3x45.3x45.3) cm. number of Cow dung used: 500.

d. Kukutaputa: According to Rasendrachudamani 2 x 2 x 2 balista (46 cm) cubical. Use of 300 (200+100) vanyopala. Some author mentioned about the use of 10 vanyopala. Used for Tutha, Parada, Loha, Svarna Bhasma. There are no sources in the current document.

e. Varahaputa: 1 x 1 x 1 Aratni(distance between elbow joint upto little finger tip) (42cm) Different opinion about no of vanyopala (as Crodaputa, varnayakhya. Used for Abhraka, Tamra, Rajata and Kapardika bhasma.

f. Laghuputa (kapotputa): Also known as laghuputa, mriduputa, and swalpaputa. 8 number of vanyopala are heaped up on the ground, around the enclosed samputit dravya explained by Rasaprakashsudhakar, Rasendra-chudamani Used for marana of rajata, svarna, parad, Hartal bhasma.

g. Bhudharaputa: According to Rasendrachudamani, angulapramana of depth pit should be made. Put aushadhiyuktasharava inside pit, cover pit with vanyopal and set fire. Used for jarana and paradabhasma.

h. Govar (Lavakaputa): Smallest among all. According to Rasaprakashsudhakar³⁸ 64 tolavanyopalachurna(cow dung powder) or 64 tolatusha, Sharava samputa placed in between and ignite fire. Also explained by Rasendrachudamani, RRS, RT, Shodashi pramana (4 tola According to Kalinga Mana). Used for bhasmikanana of mridudravya i.e. gandhak and parad bhasma, Resembleswith Lavaka bird (goraiya).

i. Bhandra (kumbhaputa): According to Rasaprakashsudhakar Bhandraputa, mridubhandraputa. Tusha(husk) is taken in earthen mud pot, half of the pot is filled with husk, placed the shravasamputa over it and remaining place of the pot also filled with husk and ignite fire the mouth of pot kept open. Also, Rasendrachudamani, RRS, RT and Bhavaprakasha also explained the same but the mouth of pot has been closed. No explanation about duration of agni is given.

j. Valukaputa: Different opinion of different Acharyas: According to RRS: Valuka is taken in earthen mud pot Fill it up to neck and put the sharvasamputa in middle of pot and ignite fire. According to Vagbhata: explained use of Baluka only. According to rasprakashsudhakar use of Baluka and vanyopala.

Uses of PutaBhasmikanana, Remove doshas (harmfull effect of drug), Increases quality (Guna`s), Convert drugs of minerals metal origin into laghu (light) form as a result bhasma do not sink in water. Develop dipana property which stimulate whole metabolic process of the body. It encourages the formation of newer compounds that are therapeutically more potent such dhatu bhasma fulfil all the bhasma pariksa and readily accepted by the living body tissue

Goshala

There was a Goshala at the Abhyankar Ayurvedic Products PVT. LTD , which we got to observe. There were 35 cows and 3 buffalos and 15 newborns there . These cows are taken care over there and their urine and milk are used for sudhi of various products and raw materials . The cow's urine is used for sudhi, the raw material used for making bhasmas . And the cows milk is also used for various places for preparation of the final product.



Solar Plant

There was a solar plant in the industry. The temperature inside is maintained by the solar panels. The solar plant had a very hot temperature in it . And it is used for drying of various herbs and plant material.

VES COLLEGE OF PHARMACY

Hashu Advani Memorial Complex, Behind Collector Colony, Chembur (E), Mumbai - 400 074

Activity Report A.Y 2022-23

Details of activity: Visit to ACTREC (Industrial visit)

Name of the Activity	Visit to ACTREC; OPEN DAY@ACTREC	IQAC ACTIVITY No:	IQAC/2022-23/ IV-TY and M Pharm. /01
Day, Date	02-12-2022	Department/ Committee/Faculty	Class coordinator IERC
Venue	ACTREC	Time	1.30am -5.15 pm
Nature of activity	Industrial visit	Total no. of participants	16

Activity Information:

Objectives	To acquaint the students to current research in cancer and observe the working of high end equipment.
Methodology	Demonstration of equipment, and Interaction with research scholars, scientists and clinicians.
Outcomes	Practical knowledge about the cutting edge research in cancer treatment and career counselling

PROOFS & DOCUMENTS ATTACHED (Tick mark the proofs attached):

<input checked="" type="checkbox"/>	Notice and communication	<input checked="" type="checkbox"/>	Feedback form
<input checked="" type="checkbox"/>	Student list of participation	<input checked="" type="checkbox"/>	Feedback analysis
<input checked="" type="checkbox"/>	Photos		Media news details
<input type="checkbox"/>	Certificate		Any other

Name & Signature of Coordinator	Name & Signature of Head/Committee In charge	Name & Signature of IQAC Coordinator
Dr. Harsha Kathpalia <i>Harsha Tka</i>	Class coordinators & IERC T.Y.B. Pharm. SYM. Pharm. <i>Harshada Tka</i>	Dr. Rajashree Hirlekar <i>Raj</i>




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T. Y. B. Pharm

- 1 Bhosale Rutuja Suhas
- 2 Mudaliar Nandini Lokanathan
- 3 Kumari Sneha
- 4 Pandey Gaurav Onkarnath
- 5 Karkera Preeti
- 6 Bhide Chinmayee Yogesh
- 7 Sethi Gurleen Kaur Ranjit Singh
- 8 Gawade Nidhi Arvind
- 9 Kotian Divya Yeshwant
- 10 Chaurasiya Anjali Anil
- 11 Sawant Anushka Vinod

SY M Pharm students:

1. M-PH-20122 Baranwal Priya Krishna
2. M-QA-21422 Prabhu Nirmiti Bipin
3. M-QA -20122 Choudhary Ashok Ramlal
4. M-PC-20722 Patil Shefali Shekhar



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3:22 PM

Welcome to Vivekanand Education Society Mail - A GENTLE REMINDER: Open Day @ ACTREC - On 1st and 2nd Decemb...



Harsha Kathpalia <harsha.kathpalia@ves.ac.in>

A GENTLE REMINDER: Open Day @ ACTREC - On 1st and 2nd December 2022

2 messages

Ojaswini Upasani <oupasani@actrec.gov.in>
To: Scope <scope@actrec.gov.in>
Cc: stenopool@actrec.gov.in, smunnolli@actrec.gov.in

Wed, Nov 30, 2022 at 5:21 PM

Dear All,

This is a gentle reminder for your participation in ACTREC Open Day 2022 either on 1st Dec or 2nd Dec 2022.

Please note the brief schedule as follows:

	Morning Session	Afternoon Session
Arrival @ KS Building, ACTREC	9.35 -9.45 am	1.20 – 1.30 pm
Poster Session	9.45 – 10.05 am	1.30 - 1.50 pm
Announcements	10.10 am	1.55 pm
Introductory Talk	10.20 am to 10.50 am	2.00 pm to 2.40 pm
Lab Visits	11 am to 1.05 pm	2.45 pm to 4.50 pm

The Open Day 2022 demonstration details are uploaded on ACTREC website.


https://actrec.gov.in/sites/default/files/latest_events/FINAL%20flyer%20for%20open%20day%202022.pdf

Thanking you for your cooperation in all the educational endeavors of ACTREC.


With best regards,

Dr. Ojaswini Upasani

SCOPE Cell, ACTREC

 Flyer for open day 2022.pdf
746K




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Supriya Shidhaye <supriya.shidhaye@ves.ac.in>

Wed, Nov 30, 2022 at 5:26 PM

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The Cancer Research Institute (CRI) - then located at the Tata Memorial Centre's Parel, Mumbai campus, organized its first 'Open Day' to showcase its research programs before the undergraduate and graduate students from science colleges of Mumbai in 1995. This tradition is continued uninterrupted and with the same vim and vigor even after CRI moved to the newly established Advanced Centre for Treatment, Research and Education in Cancer (ACTREC) in Kharghar, Navi Mumbai, in 2002. CRI and the Clinical Research Centre (CRC - established in 2005) actively participate in ACTREC's Open Day.

This year, ACTREC is organizing its Open Day on 1st and 2nd of December 2022 to showcase its facilities to the invited group of students and accompanying faculties from science, pharmacy, medical and allied colleges of Mumbai and Navi Mumbai. During these two days (four sessions of half-day each) over 500 students are expected to visit the Centre. Each session will begin with a poster display on cancer research, various diagnosis and treatment modalities and prevention of cancer, followed by an introductory talk about ACTREC highlighting the Center's research, clinical and academic programs.

After the introductory talk, visit to eight laboratories to witness the live research experiments and observe high-end equipment and their importance in cancer research will start. The volunteers will lead each batch of 15 students and their faculties to the demonstrating research labs. Each demonstration will focus on the technological platform used to further cancer research or clinical research programs. The students will get an opportunity to see cutting-edge research and a chance to interact with scientists, clinicians, and research scholars.

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ACTREC Open Day 2022: Thu. 1st – Fri. 2nd December 2022

IMPACT ANALYSIS FOR INDUSTRIAL VISIT

Academic Year: 2022-23

Date: 02-12-22

Title of the activity: Industrial visit to ACTREC, Kharghar

A. Objectives:

1. To provide students an insight regarding working module of anti-cancer research facility
2. To bridge the gap between theoretical training and actual experimental work.
3. To develop interest among Students/Learners towards usage of Modern tools, sophisticated equipment and to create Professional Identity.

B. Activity Outcomes:

	Upon completion of this activity learners would:	Mapped PO	Level of Mapping
A01.	Be able to recognize the various working units of a research facility	1, 11	3
A02.	Be able to recognize different steps and processes involved in research.	1, 11	3
		4	2
A03.	Become more aware of research practices and regulation as well as importance of documentation.	1	3
		4	3
A04.	Be able to better identify their prospective areas of work in overall organization function.	1	3
		2	3
		7	3
		8	2
		10	3



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IMPACT ANALYSIS FOR INDUSTRIAL VISIT

D. Rate the outcome: Industry visits helped you to

Q. No.	Question	ACTIVITY mapped	PO MAPPED
1.	Observe the various working units of a Research Facility	A01	1, 11
2.	Understand the different steps and processes involved in Research facilities operations.	A02	1, 11
3.	Comprehend the type and scale of the high end equipment and instruments used at various facilities.	A03	1,4
4.	Relate the theory learned in the course to its application in the research.	A01, A02, A03	1,4,11
5.	Be aware about professional practices and importance of planning, ethics and computational applications.	A04	1,2,7,8,10
6.	Learn about professional opportunities available in industry/Hospital/ Research Facility.	A04	1,2,7,8,10

Please rate using the following key-
3: Strongly agree 2: Agree 1: Disagree

Roll No.	Student Name	Q1	Q2	Q3	Q4	Q5	Q6	Student Sign
1	Bhosale Rutuja Suhas	3	3	3	2	3	3	<i>Rutuja</i>
2	Mudaliar Nandini Lokanathan	3	3	2	3	3	3	<i>Nandini</i>
3	Kumari Sneha	3	3	3	3	3	3	<i>Sneha</i>
4	Pandey Gaurav Onkarnath	3	3	3	3	3	3	<i>Gaurav</i>
5	Karkera Preeti	3	3	3	3	3	3	<i>Preeti</i>
6	Bhide Chinmayee Yogesh	3	3	3	3	3	2	<i>Chinmayee</i>
7	Sethi Gurleen Kaur Ranjit Singh	3	2	3	3	3	3	<i>Gurleen Kaur</i>
8	Gawade Nidhi Arvind	3	3	2	2	3	3	<i>Nidhi</i>

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VES COLLEGE OF PHARMACY

Hashu Advani Memorial Complex, Behind Collector Colony, Chembur (E), Mumbai - 400 074

IMPACT ANALYSIS FOR INDUSTRIAL VISIT

9	Kotian Divya Yeshwant	3	3	3	3	3	3	Divya
10	Chaurasiya Anjali Anil	3	3	3	3	3	3	Anjali
11	Sawant Anushka Vinod S.Y.M. Pharm.	3	3	3	2	3	3	Anushka
12	Baranwal Priya Krishna	3	3	3	3	3	3	Priya
13	Prabhu Nirmiti Bipin	3	3	3	3	3	3	Nirmiti
14	Patil Shefali Shekhar	3	3	3	3	3	3	Shefali
15	Choudhary Ashok Ramlal	3	3	3	3	3	3	Ashok
	Median Average	3	3	3	3	3	3	
	% response	100	100	100	100	100	100	
	PO attainment Level	3	3	3	3	3	3	

Any suggestions to improve the activity/ achieve the outcomes of the activity

Name & Signature of Activity Co-ordinator: Dr. Harsha Kathpalia

Harsha Tke



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V.E.S.

Since 1962

VIVEKANAND EDUCATION
SOCIETY'S COLLEGE OF
PHARMACY HERBAL DRUG
TECHNOLOGY PRACTICE SCHOOL
INDUSTRIAL VISIT FOR ACADEMIC
YEAR 2022-23
AT
ANCHROM ENTERPRISES (I) P. LTD,
MULUND, MUMBAI

FACULTY AND STUDENT MEMBERS OF LY B. PHARM
HERBAL DRUG PRACTICE SCHOOL WHO VISITED
ANCHROM ENTERPRISES

22/09/2022 THURSDAY

FACUTLY MEMBERS

- 1) Mr. Keyur Shastri
- 2) Dr. Divya Menon
- 3) Ms. Juilee Shiraskar

STUDENTS

- 1) Vaishnavi Bhau Thorat
- 2) Neel Tilwani
- 3) Saniya Fitwalla
- 4) Sagarika S Salaskar
- 5) Mukta Lele
- 6) Aniket Gupta
- 7) SUYASH RAMESH INAMDAR
- 8) Rajinder kumar
- 9) Ganesh nilakh
- 10) Vikas mali
- 11) Kuldeep Prajapati
- 12) Arvind Jolad

23/09/22 FRIDAY

FACULTY MEMBERS

- 1) Mrs. Vidhi Bhatia
- 2) Dr. Aparna Palshetkar

STUDENTS

- 1) Upasana Tiwari
- 2) Aparna Rajashekhar Andhe
- 3) Dhruvil Anil Rathod
- 4) Ritesh Autade
- 5) Sangita Patel
- 6) Sanjana Santosh Shirsat
- 7) Jain Kunal Lalit
- 8) Vaibhav Maheshwari
- 9) Dawani Girish Suresh
- 10) Vipin Bhagwandas Jadhvani
- 11) Rubi Subhashchandra Soni

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INTRODUCTION

Herbal Drug Technology Practice school of Vivekanand Education Society's College of Pharmacy arranged One Day Training on CAMAG HP-TLC SYSTEM at Anchrom Enterprises (I) P. Ltd, Mulund on 22.09.2022 and 23.09.2022 with batches of 11 students each. Anchrom Enterprises is one of India's oldest companies in analytical instruments supply. Being founded by a technocrat, Anchrom created a niche for itself in the Thin Layer Chromatography (TLC) technique which later became High Performance Thin Layer Chromatography (HPTLC). Anchrom is dedicated to the technique of TLC and HPTLC since inception 1978 which is supported by CAMAG of Switzerland and India-specific HPTLC Application Research Laboratory established in 1989. The world's first, new generation "HPTLC- PRO" was installed in Anchrom in 2019. Anchrom's tag line describes it the best- "Technologists, not Traders!"

Final Year B. Pharm. HDT practice school students along with Mrs. Vidhi Bhatia, Mr. Keyur Shastri, Dr. Aparna Palshetkar, Dr. Divya Menon and Ms. Juilee Shiraskar visited Anchrom Enterprises (I) P. Ltd. at Mulund in two batches.

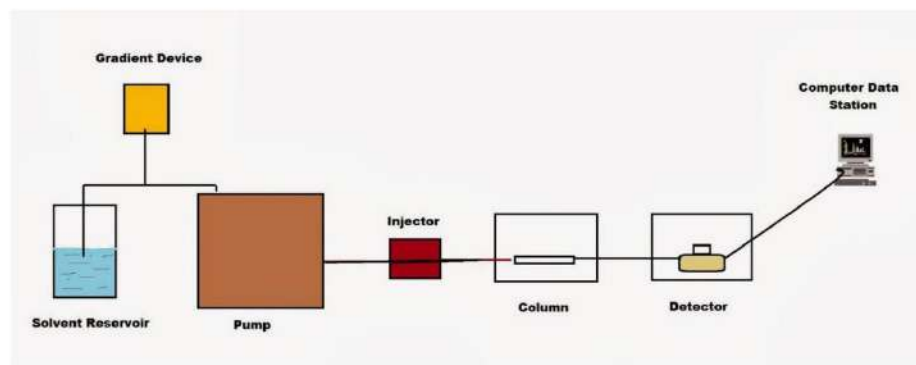
HISTORY OF HPLC AND HPTLC

Liquid chromatography was initially discovered as an analytical technique in the early twentieth century and was first used as a method of separating colored compounds. This is where the name chromatography *chroma* means color, *graphy* means writing, was derived. A Russian botanist named Mikhail S. Tswett used a rudimentary form of chromatographic separation to purify mixtures of plant pigments into the pure constituents. He separated the pigments based on their interaction with a stationary phase, which is essential to any chromatographic separation. The stationary phase he used was powdered chalk and alumina, the mobile phase in his separation was the solvent. After the solid stationary phase was packed into a glass column (essentially a long, hollow, glass tube) he poured the mixture of plant pigments and solvent in the top of the column. He then poured additional solvent into the column until the samples were eluted at the bottom of the column. The result of this process most crucial to his investigation was that the plant pigments separated into bands of pure components as they passed through the stationary phase. Modern high performance liquid chromatography or HPLC has its roots in this separation, the first form of liquid chromatography. The chromatographic process has been significantly improved over the last hundred years, yielding greater separation efficiency, versatility and speed.

HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)

INTRODUCTION:

High-performance liquid chromatography, abbreviated as HPLC, is a chromatographic technique of great versatility and analytic power used in many aspects of drug manufacturing and research. It separates or identifies mixtures of substances into their components based on their molecular structure and composition. High-performance liquid chromatography (HPLC) involves the injection of a small volume of liquid sample into a tube packed with tiny particles (3 to 5 microns (μm) in diameter called the stationary phase) where individual components of the sample are moved down the packed tube with a liquid (mobile phase) forced through the column by high pressure delivered through a pump. The column packing is used to separate the components from one another. It involves various chemical and/or physical interactions between their molecules and the packing particles. The separated components are then detected at the exit of the column by a detector that measures their amount. Output from this detector is called a liquid chromatogram.



HPLC instrument consist of:

1. Gradient device
2. Solvent Reservoir
3. Pump
4. Injector
5. Column
6. Detector
7. Computer Data Station

HPLC METHODOLOGY:

In very small amounts, the sample mixture to be separated and tested is sent into a stream of mobile phase percolating via a column. There are different types of columns available with sorbents of varying particle sizes and surfaces.

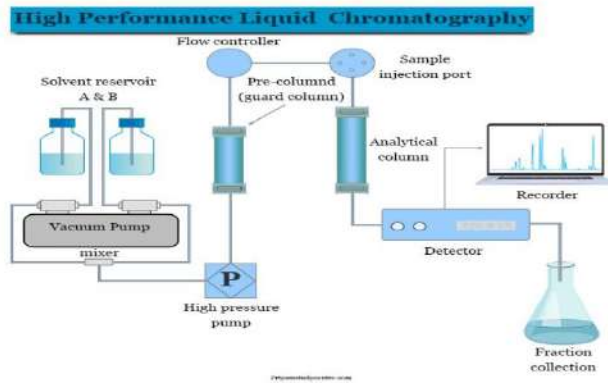
The mixture moves through the column at varying velocities and interacts with the sorbent, also known as the stationary phase. The velocity of each component in the mixture depends on 1) its chemical nature, 2) the nature of the column and 3) the composition of the mobile phase. The time at which a specific analyte emerges from the column is termed as its retention time. The retention time is measured under specific conditions and considered as the identifying characteristic of a given analyte.

Sorbent particles might be hydrophobic or polar in nature. The commonly used mobile phases include any miscible combination of water and organic solvents such as acetonitrile and methanol. Water-free mobile phases can also be used.

The aqueous component of the mobile phase might contain acids like formic, phosphoric or trifluoroacetic acid or salts to enable the separation of the sample components. The composition of the mobile phase is either maintained as a constant or as varied during the chromatographic analysis. The constant approach is effective for the separation of the sample components that are not very dissimilar in their affinity for the stationary phase. In the varied approach, the composition of the mobile phase differs from low to high eluting strength. The eluting strength of the mobile phase is reflected by analyte retention times where high eluting strength produces fast elution.

The composition of the mobile phase is chosen based on the intensity of interactions between several sample components and the stationary phase.

The HPLC partitioning process is quite similar to the liquid-liquid extraction process except that the former is a continuous process, unlike the latter which is a step-wise process. It is recommended that trial partitioning processes be performed to determine the exact HPLC method that would provide adequate separation.



HPTLC- HIGH PERFORMANCE THIN LAYER CHROMATOGRAPHY

INTRODUCTION:

An extension of TLC is high-performance thin layer chromatography (HPTLC) is robust, simplest, rapid, and efficient tool in quantitative analysis of compounds. HPTLC is an analytical technique based on TLC, but with enhancements intended to increase the resolution of the compounds to be separated and to allow quantitative analysis of the compounds. Some of the enhancements such as the use of higher quality TLC plates with finer particle sizes in the stationary phase which allow better resolution. The separation can be further improved by repeated development of the plate, using a multiple development device. As a consequence, HPTLC offers better resolution and lower Limit of Detection (LODs).

Visual detection is suitable for qualitative analysis, but a more specific detection method is needed for quantitative analysis and for obtaining structural information on separated compounds. UV, diode-array and fluorescence spectroscopy, mass spectrometry (MS), Fourier-transform infrared (FTIR), and Raman spectroscopy have all been applied for the *in situ* detection of analyte zones on a TLC plate. The usage of HPTLC is well appreciated and accepted all over the world. Many methods are being established to standardize the assay methods. HPTLC remains one step ahead when compared with other tools of chromatography. One of the available chromatographic techniques is HPTLC, which is used for the identification of constituents, identification and determination of impurities, and quantitative determination of active substances. The use of modern apparatus such as video scanners, densitometers, and new chromatographic chambers, and more effective elution techniques, high-resolution sorbents with selected particle size or chemically modified surface, the possibility of combining with other instrumental methods, and development of computer programs for method optimization all make HPTLC an important alternative method to HPLC or gas chromatography. Specifically, HPTLC is one of the ideal TLC technique for analytical purposes because of its increased accuracy, reproducibility, and ability to document the results, compared with standard TLC. Because of this, HPTLC technologies are also the most appropriate TLC technique.

HPTLC METHODOLOGY:

Set the analytical objective first that may be quantification or qualitative identification or separation of two components/multicomponent mixtures or optimization of analysis time before starting HPTLC. Method for analyzing drugs in multicomponent dosage forms by HPTLC demands primary knowledge about the nature of the sample, namely, structure, polarity, volatility, stability, and the solubility parameter. Method development involves considerable trial and error procedures. The most difficult problem usually is where to start, with what kind

of mobile phase.

Selection of stationary phase is quite easy, that is, to start with silica gel which is reasonable and nearly suits all kind of drugs. Mobile phase optimization is carried out by using three level techniques. First level involves use of neat solvents and then by finding some such solvents which can have average separation power for the desired drugs. Second level involves decreasing or increasing solvent strength using hexane or water for respective purposes. Third level involves trying of mixtures instead of neat solvents from the selected solvents of first and second level which can further be optimized by the use of modifier like acids or bases. Analytes are detected using fluorescence mode or absorbance mode. But, if the analytes are not detected perfectly than it needs change of stationary phase or mobile phase or need the help of pre or post chromatographic derivatization. Optimization can be started only after a reasonable chromatogram which can be done by slight change in mobile-phase composition. This leads to a reasonable chromatogram which has all the desired peaks in symmetry and well separated.



DIFFERENCE BETWEEN TLC , HPLC, HPTLC

Parameters	HPLC	HPTLC
Type	Reverse Phase Chromagraphy	Straight Phase Chromagraphy
Stationary phase	Liquid	Solid
Conditioning phase	None	Gas
Separation by	Partition	Adsorption
Results	By machine	By machine + eyes
Analysis	On - line	Off - line
Resolution	Very high	Moderate to high
Chromatography System	Closed	Open
Separating medium	Tubular column	Planar layer (plate)
Strongly Retarded Fractions Seen As	Broad peaks	Sharp Peaks
Analysis in parallel	No. Only 1 at a time	Yes. Upto 100 samples.
High temp. / pressure	High pressure	None
Time per sample	2- 60 min	1-30 min
Data obtained from chromatography	Limited to very high	High to very high

PREPARATION OF STATIONARY PHASE FOR HPTLC:

HPTLC can be regarded as the most advanced form of modern TLC. It uses HPTLC plates featuring small particles with a narrow size distribution. As a result, homogeneous layers with a smooth surface can be obtained. HPTLC uses smaller plates (10 × 10 or 10 × 20 cm) with significantly decreased development distance (typically 6 cm) and analysis time (7–20 min). HPTLC plates provide improved resolution, higher detection sensitivity, and improved in situ quantification and are used for industrial pharmaceutical densitometric quantitative analysis.

Normal phase adsorption TLC on silica gel with a less polar mobile phase, such as chloroform–methanol, has been used for more than 90% of reported analysis of pharmaceuticals and drugs. Lipophilic C-18, C-8, C-2; phenyl chemically-modified silica gel phases; and hydrocarbon-impregnated silica gel plates developed with a more polar aqueous mobile phase, such as methanol–water or dioxane–water, are used for reversed-phase TLC. Other precoated layers that are used include aluminum oxide, magnesium silicate, magnesium oxide, polyamide, cellulose, kieselguhr, ion exchangers, and polar modified silica gel layers that contain bonded amino, cyano, diol, and thiol groups.

Optical isomer separations that are carried out on a chiral layer produced from C-18 modified silica gel impregnated with a Cu (II) salt and an optically active enantiomerically pure hydroxyproline derivative, on a silica layer impregnated with a chiral selector such as brucine, on molecularly imprinted polymers of α -agonists, or on cellulose with mobile phases

having added chiral selectors such as cyclodextrins have been reported mostly for amino acids and their derivatives.

Mixtures of sorbents have been used to prepare layers with special selectivity properties.

HPTLC plates need to be stored under appropriate conditions. Before use, plates should be inspected under white and UV light to detect damage and impurities in the adsorbent. It is advisable to prewash the plates to improve the reproducibility and robustness of the results.

STEPS USED AT ANCHROM LAB TO PERFORM HPTLC

1. Feeding data in software- Vision cats 3.1
2. Application of sample on plate- Using Applicator and automatic TLC sampler
3. Chromatographic derivatization- By Derivatizer and Visualizer
4. Image docking
5. Densitometric scanning

STEP 1: SOFTWARE USED BY ANCHROM LAB : VISIONCATS 3.1

VisionCATS 3.1 controls the TLC Scanner 4 and enables quantitative evaluation of the generated

densitometric data. To determine the substance concentration in a sample, five different quantification functions (e.g. linear and polynomial) are available. Several scanning steps (e.g. scanning the plate after development and scanning the same plate after derivatization) and up to five different evaluations can be performed (with data obtained from single wavelength, multiple wavelengths or a combination of measurements in absorption and fluorescence detection mode).

STEP 2: APPLICATOR IN HPTLC7

Applicator is used to apply the sample /standard on TLC plate for the separation on components present in it.

AUTOMATIC TLC SAMPLER.41

Automatic sample application is a key factor for productivity of the HPTLC laboratory. The requirements for an instrument serving this purpose, i.e. precision, robustness during routine use and convenient handling are fully met by the Automatic TLC Sampler 4. The ATS 4 offers fully automatic sample application for qualitative and quantitative analyses as well as for preparative separations.

It consist of

- Sample/ standard holder
- Syringe for spotting the sample
- 2 containers at the back one for the solvent system and one for the waste generated.

The whole system is operated by the software. Amount of sample/ standard to be spot, and no. of spotting/bands are feed in software.

15

it is suited for routine use and high sample throughput in mass analysis. Samples are either applied as spots through contact transfer (0.1–5 μl) or as bands or rectangles (0.5 to > 50 μl) using the spray-on technique. Starting zones sprayed on as narrow bands offer the best separation attainable with a given chromatographic system. Application in the form of rectangles allows precise application of large volumes without damaging the layer. Prior to chromatography, these rectangles are focused into narrow bands with a solvent of high elution strength.

CHARACTERISTICS OF THE AUTOMATED APPLICATOR:

- Fully automatic sample application, suitable for routine.
- Application of spots, bands, or rectangles.
- Data input and monitoring through WINCATS.
- Application of solutions onto any planar medium.
- Application of sample volumes between 0.1 and 5 μl by contact transfer.
- spray-on application of sample volumes between 0.5 and > 50 μl .



AUTOMATIC TLC SAMPLER.41

OTHER APPLICATORS WHICH CAN BE USED ARE

1. Camag Nanomat (Manual sample applicator): Sample to be spotted is filled in glass capillaries, and precise volume of sample is applied on HPTLC plates in form of spots.



Camag Nanomat (Manual sample applicator)

2. Camag Linomat (Semi-automatic applicator): Sample is applied by spraying, by this solvent for sample gets evaporated. This leads to concentration of sample as narrow band leading to higher resolution for quantitative analysis.



Camag Linomat (Semi-automatic applicator)

Selection of solvents and development of solvent system in HPLC and HPTLC

As we know, chromatography is the separation of analytes from a mixture using:

A stationary phase, into which the analyte partitions and is retained.

A mobile phase, to partition the analytes from the stationary phase and transport them through the stationary phase bed.

Analytes will have different chemical affinity for each of the phases, those with less affinity for the stationary phase will elute earlier and those with a greater affinity will elute later and hence separation will be achieved. The solvents used for the mobile phase, and the ratio in which they are used, can be tuned to change the relative analyte affinity and hence the retention time and selectivity (chemical separating power) of the separation.

STEP 3: SELECTION OF SOLVENTS IN HPLC AND HPTLC AND ITS DEVELOPMENT ON CHROMATOGRAPHIC PLATE

Selection of solvents for use as a mobile phase in HPLC analysis is a key component of method development. It is not possible to have a universal solvent which will meet all applications and more than often a combination of solvents is decided based on the analysis requirements. Selection of suitable solvents is based on their physical properties and compatibilities with the sample and column stationary phase.

DEVELOPMENT OF HPLC: SATURATION CHAMBER

Fill the chamber with solvent to a height of 0.5 to 1 cm. Carefully tilt the chamber to moisten the filter paper and equilibrate the chamber with solvent vapors. After a few minutes, the chamber is saturated with vapors.

The developing chamber used for developing a TLC plate looks like this: The chamber is actually just a **beaker large enough to house the TLC plate without having to bend the plate**. Just enough developing solvent (discussed on the TLC page) is placed in the beaker to cover the bottom.



SOME ESSENTIAL CONSIDERATIONS

1. Cost

Cost is an important consideration as HPLC requires superior purity grade solvents and it is common to see dozens of HPLC systems operating round the clock in large laboratories. This means consumption of high grade solvents in bulk quantities and therefore cost considerations play a vital role.

2. Solubility

The sample should be completely soluble in the mobile phase. Slightest insolubility will result in phase separations or suspensions which will contribute to operational problems.

3. Absorbance

Generally the detectors used in HPLC are based on absorbance of light by sample constituents. The intrinsic absorbance of the mobile phase components in the selected wavelength range should not interfere with the absorbance of the sample. The mobile phase solvent should ideally have no absorbance at the wavelength of interest.

4. Volatility

The mobile phase solvents should have low volatility especially for use with light scattering detectors. Highly volatile solvents can lead to compositional changes in mobile phase composition over use and storage. This can lead to poor reproducibility of chromatograms.

5. Viscosity

The selected solvents should have low viscosity so that flow through the column does not lead to development of high back pressures.

6. Inertness

The selected solvents should be inert to sample components, column packing and column material. Any reactivity with any of these components can lead to formation of precipitates, gases or other reaction products which can upset the system performance. The solvents should not form separate phase on coming in contact with the sample. In other words there should be complete miscibility of solvents.

SELECTION OF SOLVENT IN HPTLC

The selection of mobile phase is based on adsorbent material used as stationary phase and physical and chemical properties of analyte.

General mobile-phase systems that are used based on their diverse selectivity properties are diethyl ether, methylene chloride, and chloroform combined individually or together with hexane as the strength-adjusting solvent for normal-phase TLC and methanol, acetonitrile, and tetrahydrofuran mixed with water for strength adjustment in reversed-phase TLC.

DEVELOPMENT IN HPTLC

1. Twin Trough Chamber

This is a classical developing tank for Thin-Layer Chromatography. A Twin-Trough-Chamber reduces disposal problems and allows preconditioning of the plate with any solvent and for any duration. For preconditioning or saturation the trough opposite to the plate is filled with developing solvent. The use of a saturation pad is recommended for a fast, homogeneous and reproducible chamber saturation process.

Key Features

- Glass tank with two troughs for manual development
- Available in the formats 20 x 20 cm, 20 x 10 cm, and 10 x 10 cm
- Steel or glass lid



2. ADC2

The CAMAG Automatic Developing Chamber 2 (ADC 2) is the heart of an HPTLC system. It performs the development step fully automatically, reproducibly, and independent of environmental effects. The activity and pre-conditioning of the layer, chamber saturation, developing distance and final drying can be preset and automatically monitored by the ADC 2.

The ADC 2 is a device for reproducible plate development. It performs the development step fully automated, and independent of environmental effects. The activity and pre-conditioning of the layer, chamber saturation, developing distance and final drying can be preset and

automatically monitored by the ADC 2. Two modes of operation are possible: stand-alone with input of parameters via keypad, or remote operation from visionCATS with process monitoring, documentation of operating parameters, and reporting.



3.AMD2

The AMD 2 is a software-controlled HPTLC chamber for gradient development. It is used for difficult separation problems that cannot be solved by isocratic HPTLC.

The separation of complex samples is a challenging task for every chromatographic system, particularly when the sample components span a wide polarity range. The AMD procedure offers an excellent solution as it allows stepwise gradient elution over increasing separation distances. As a result acids, bases, neutral, hydrophilic, and lipophilic substances can be separated in a single AMD run. This makes AMD suitable for a variety of applications. The technique is frequently used in lipid analysis and in routine analysis of drinking water. Pigment formulations with a complex composition, resins as well as additives of mineral oil products are other typical applications of AMD analysis.



STEP 4: DERIVATIZATION

It is an inherent advantage of TLC/HPTLC that all analytes remain stored on the plate and can be readily derivatized after chromatography. Analytes that do not respond to visible or UV light can be rendered detectable. In many cases, analytes or classes of analytes can be identified by specific reagents, enabling their selective detection. Pre-chromatographic derivatization is possible by overspraying the sample application zones with the CAMAG® Linomat 5, the CAMAG® Automatic TLC Sampler 4 (ATS 4) or CAMAG® HPTLC PRO Module APPLICATION.

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For the transfer of liquid reagents for post chromatographic derivatization, one can choose between spraying. Automated spraying (CAMAG® HPTLC PRO Module DERIVATIZATION, CAMAG® DERIVATIZER) or manual dipping (CAMAG® Chromatogram Immersion Device 3) are the preferred techniques, particularly when a quantitative evaluation is intended.



CAMAG® Derivatizer

In most cases, the derivatization reaction needs to be completed by heat treatment. Heating the plate at the desired temperature with a plate heater (CAMAG® TLC Plate Heater 3) specifically designed for this purpose is highly recommended. A plate heating unit is an integral part of the CAMAG® HPTLC PRO Module DERIVATIZATION.

The Derivatizer is used for automated reagent transfer in the derivatization of thin-layer chromatograms and sets a new standard of reproducibility by employing a unique “micro droplet” spraying technology (patented). The Derivatizer ensures homogeneity and convenience in applying derivatization reagents, and offers other advantages as compared to manual spraying and immersion. The device is suitable for all common reagents. To meet the divergent physicochemical properties of the reagents, e.g. viscosity, four different color-coded nozzles are available, and the user can select from six spraying modes.

KEY FEATURES

- Unsurpassed homogeneous reagent distribution
- Environmentally friendly and safe handling through a closed system
- Reproducible and user-independent results
- Low reagent consumption (2-4 mL)
- Hood for 20 x 10 cm and/or 20 x 20 cm plates
- Intuitive handling and easy cleaning

The following most common reagents have been tested and validated by the CAMAG laboratory for use with the Derivatizer:

- Sulfuric acid reagent (10 % in methanol)
- Anisaldehyde reagent
- Natural product reagent
- Polyethylene glycol solution
- Iodine solution (0.5% in ethanol)
- Dragendorff reagent
- Fast blue salt B reagent
- Ehrlich's reagent
- Phosphomolybdic acid reagent
- Ninhydrin reagent Copper (II) sulfate reagent
- Aniline-diphenylamine-phosphoric acid reagent
- Vanillin reagent
- Potassium hydroxide solution (5% in methanol)
- Aqueous solutions (enzymatic solutions, etc.)

STEP 5: VISUALIZER IN HPTLC

Visualizer is a professional imaging and documentation system for TLC/HPTLC chromatograms and other planar objects with a state-of-the-art digital CCD camera, connected by USB 3.0.

KEY FEATURES:

- CCD camera
- Illumination under UV 254 nm, UV 366 nm, and white light
- Side by side comparison of tracks with Comparison Viewer
- Image-based evaluation
- Any plate format up to 20 x 20 cm
- Software-controlled with visionCATS

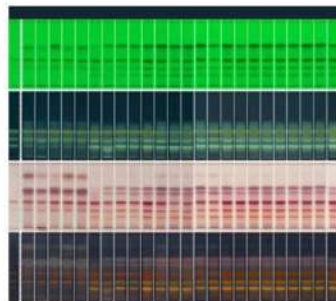


TLC Visualizer 2 operated under visionCATS :

visionCATS 3.1 organizes the workflow of TLC/HPTLC, controls the involved CAMAG instruments, and manages data.

For the evaluation of acquired images sophisticated enhancement tools and also functions for annotation and determination of position (RF) are required. This is where visionCATS comes into play. The state-of-the-art software supports low-noise, high-dynamic-range imaging (HDRI) and includes a comprehensive set of image enhancement tools. Various tools that are there in software are :

- Data view : This allows visual evaluation of a plate in different illumination modes and offers broad range of helpful tools like Rf tool display.
- Comparison viewer : Selected tracks from different images taken from different plates under UV 254 nm , white light and UV 366 nm can be displayed side by side .



Comparison view in visionCAT 3.1

- Image enhancement: Images are automatically captured based on an optimized control of the illumination and parameters specified in the TLC/HPTLC method. Sophisticated algorithms guarantee the highest image quality for identification of even the weakest zones. Multiple standard-dynamic range images are taken at different exposures to capture details in shadows or highlights, and are merged into a single HDR image.

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- Exposure Normalization : Allows the retreatment of the image by normalizing the exposure
- Clarify tool: virtually changes the illumination setting after capturing and makes very faint zones visible on an unchanged background .

TECHNICAL SPECIFICATIONS :

A)Object size supported :

1)With 12 mm lens: up to 20 x 20 cm

2)With 16 mm lens: up to 20 x 10 cm

B)Light sources:

1)2 x UV tube short wavelength (254 nm) - direct light

2)2 x UV tube long wavelength (366 nm) - direct light

3)2 x white light tube - direct light (remission)

4)2 x white light tube - transmitted light (transmission)

C)Camera type: Digital CCD camera, sensor „SONY Super HAD CCD“, HDR

D)Camera exposure time: 2.3 ms to 10 s, up to 60 s for HDRI, min. step size 1 μ s

E)Connections: USB 3.0 and RS-232 serial port

F)Power connection: 100–240 V, 50/60 Hz, 50 W

G)Software for instrument control: visionCATS (2.3 or higher) on MS Windows 7 and Windows 10

H)Dimensions (W x D x H): 480 x 537 x 596 mm

I)Weight: 17 kg

STEP 6: SCANNER

The TLC Scanner 4 is a scanning densitometer. It measures the reflection of separated compounds in absorption and/or fluorescence mode. Controlled by visionCATS 3.1 software the TLC Scanner 4 enables quantitative evaluation of the generated densitometric data. The spectral range of light from 190 to 900 nm is available for selecting single or multiple wavelengths for scanning densitometry. Detection can thus be fine-tuned to match the spectral properties of the analyte to its optimized specificity and sensitivity of the detection.

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KEY FEATURES

Measurement of reflection, either in absorbance and/or fluorescence.

Spectral range from 190 to 900nm.

Data step resolution 25-200 μm .

Spectrum resolution up to 100nm/s.

Any plate format up to 20 \times 20 cm.

Software-controlled by visionCATS.

LIGHT SOURCES USED

Deuterium-190 to 450 nm

Tungsten-450-900 nm

Mercury-366 nm

Identify- 1 band

Polarity- 3 bands (start, mid and end)

THE SCANNER ULTIMATE PACKAGE:

Multi Wavelength Scan: this feature offers the possibility to perform a multi-wavelength scan with up to 31 selected wavelengths or a combination of measurements in absorption and fluorescence detection mode.

Scanner Quantification: this feature allows to quantify each individual substance on the plate. Five different quantification functions are available for evaluation to determine the concentration of the substance in a sample. In one analysis file up to five evaluation steps can be performed in multiple plate states (e.g. plate after development and same plate after derivatization).

Spectrum Scan: this feature includes the measurement of the spectrum of each individual substance on the plate including the evaluation of the substance purity by comparison with reference standard.

Technical Specifications

Light sources Deuterium lamp, usable continuum 190 – 450 nm.

Halogen-tungsten lamp, usable continuum 350 – 900 nm

High-pressure mercury lamp, spectral lines (248, 254, 265, 280, 297, 302, 313, 366, 405, 436, 546, 577, 579 nm)

The lamp, which is positioned in the light path, is automatically ignited. All lamps are current stabilized.

The slit is automatically illuminated with visible light when the compartment illumination is switched on. The scanning compartment is illuminated with a 4 W tube emitting UV 254

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nm which the user can replace by a UV 366 nm or a white light tube.

Monochromator Concave holographic grating, 1200 lines/mm, bandwidth selectable 5 or 20 nm, wavelength range 190–900 nm; monochromator driven by step motor, reproducibility of wavelength setting better than 0.2 nm, accuracy better than 1 nm; connector for flushing with nitrogen.

Maximum speed of spectra recording 100 nm/s.

Secondary filter Motor-driven filter wheel with three automatically selected filters for the elimination of second order wavelengths; 400 nm cut-off filter for fluorescence measurements; three positions for user selected filters.

Scanning slit Revolving disk with 20 fixed apertures; length of slit images selectable between 0.2 and 12 mm, width between 0.1 and 1.2 mm in 42 combinations

Detector Two matched broadband photo multipliers, multi alkali type, spectral sensitivity 185 – 900 nm

Stage drive Independent in both directions by step motors, micro step driven for smooth movement; reproducibility of positioning better than 50 µm in Y-direction, better than 100 µm in X- direction; maximum scanning speed 100 mm/s

Power connection 115 V and 230 V selectable; 50/60 Hz; maximum energy use 180 W (tungsten and mercury lamp ignited)

Dimensions (W x D x H) 590 x 650 x 367 mm

Connections RS-232 serial port

A/D Converter 16 bit, 2-channel A/D converter, 100 ms per double conversion

Weight 39 kg

REGULATORY COMPLIANCE

Factors that may affect chromatographic behavior include the following:

- Composition, ionic strength, temperature, and apparent pH of the mobile phase
 - Flow rate, column dimensions, column temperature, and pressure
 - Stationary phase characteristics, including type of chromatographic support (particle-based or monolithic), particle or macropore size, porosity, and specific surface area
 - Reverse-phase and other surface modification of the stationary phases, the extent of chemical modification
- System suitability is to prove that system is working perfectly before the analysis on HPLC, GC, TOC analyzer or any other system. It is required to be done before every sample analysis. HPLC, short for High performance liquid chromatography is a technique used for separating the components in a mixture.

Chromatographic parameters-

The separated analytes which are transported by the mobile phase are recorded as signal peaks by the detector unit. The total amount of all peaks is called chromatogram. Each individual peak provides qualitative and quantitative information of the analyte.

Qualitative information is given by the peak itself (e.g.: shape, intensity of the signal, time of appearance in the chromatogram). In addition, the area of a peak is proportional to the concentration of the substance. Hence, the chromatography data management software can calculate the concentration of the sample by integration. This provides quantitative information. Ideally the peaks are recorded as a Gaussian bell-shaped curve.

DELAY TIME (T_0)

The delay time refers to the time which is required for a non-retarded compound to be transported from the injection site to the detector unit (where the compound is recorded). During this time, all sample molecules are exclusively located in the mobile phase. In general, all sample molecules share the same delay time. The separation is caused by differing adherence of the substances with the stationary phase.

RETENTION TIME (T_R)

The retention time refers to the time which is required for a compound from the moment of injection until the moment of detection. Accordingly, it represents the time the analyte is in the mobile and stationary phase. The retention time is substance-specific and should always provide the same values under the same conditions.

PEAK WIDTH (W)

The peak width covers the period from the beginning of the signal slope until reaching the baseline after repeated drop in the detector signal.

TAILING FACTOR (T)

In practice, perfectly symmetric peaks are very rare. In a chromatogram they often show some degree of tailing. Peak tailing is measured by the tailing factor T . This factor describes the peak asymmetry, i.e. to which extent the shape is approximated to the perfectly symmetric Gaussian curve. The tailing factor is measured as: $T = b/a$ a represents the width of the front half of the peak, b is the width of the back half of the peak. The values are measured at 10 % of the peak height from the leading or trailing edge of the peak to a line dropped perpendicularly from the peak apex. $T = 1$ represents a symmetrical peak. For $T > 1$ the peak profile is named tailing. For $T < 1$ the peak profile is named fronting.

ADVANTAGES OF HPTLC:

1. High resolution of zones due to higher number of theoretical plates.
2. Shorter developing times
3. Less solvent consumption
4. Evaluation time is less.
5. Enormous flexibility
6. Solvent degasing and removal of impurities is not necessary

ADVANTAGES OF HPLC:

1. It is simple, rapid, reproducible.
2. High sensitivity
3. High performance
4. Wide varieties of stationary phase
5. Accuracy and Precision
6. Rapid process and hence time saving

CONCLUSION

The students of Herbal Drug Technology Practice school are thankful to the faculty members and college for arranging industrial visit. We are also thankful to the staff of Anchrom Enterprises for explaining and demonstrating HPTLC and for the hospitality



VIVEKANAND Education Society's College of Pharmacy

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(Sinhli Linguistic Minority, Approved by DTE, Pharmacy Council of India & Govt. of Maharashtra, Affiliated to University of Mumbai)
Awarded A+ Grade with a CGPA of 3.46 by NAAC, 2022 (Valid till 2027)
Recognition under section 2(F) & 12(B) of the UGC Act, 1956

VES

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Prof. Supriya Shidhaye

M. F.
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Activity Report A.Y 2022-23

DEPARTMENT PHARMACEUTICAL CHEMISTRY

IQAC ACTIVITY No:

Details of activity:

Name of the Activity	Industrial Visit	Activity No.	14 of 22 of Practice School
Day, Date	10 Sep 2022	Department/Committee/Faculty	Practice School in Drug Discovery and Process Chemistry
Venue	CleanChem lab, TTC Navi Mumbai	Time	Full Day, 10 am to 5 pm
Nature of activity	Indoor/Outdoor	Total no. of participants	Faculty : 03 Students : 21

Activity Information:

Objectives	1. Understand the scale and process at Industrial level of the chemical Process 2. Exposure to state of the art facility and new avenues in the field.
Methodology	1. Demonstration 2. Field Visit
Outcomes	21 of 22 students visited the Industry. Motivated to work in the field of chemistry for both Final Year Project, PG education and as a career choice.

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PROOFS & DOCUMENTS ATTACHED (Tick mark the proofs attached):

<input type="checkbox"/>	Notice and communication	<input type="checkbox"/>	Feedback form
<input checked="" type="checkbox"/>	Student list of participation	<input type="checkbox"/>	Feedback analysis
<input checked="" type="checkbox"/>	Photos	<input type="checkbox"/>	Media news details
<input type="checkbox"/>	Certificate	<input type="checkbox"/>	Any other

Name & Signature of Coordinator	Name & Signature of Head/Committee In charge	Name & Signature of IQAC Coordinator
 Rashmi Wani	 Dr. Manohar Shinde	 Prof. Rajashree Hirbhar

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IMPACT ANALYSIS FOR UG PROJECT (SURVEY BASED)

Academic Year: 2022-23

Date: 10.6.2023

A. **Title of the activity:** UG Project (Survey Based)

B. **Objective:**

To introduce 'Survey' as a method of research which helps to uncover answers to specific questions in an unbiased manner.

C. **Activity Outcomes:**

	Upon completion of this activity, learners would:	Mapped PO	Level of Mapping
A01.	Be able to frame appropriate questionnaires on specific topics	1	3
A02.	Be able to communicate with survey participants in a professional manner and Be more aware of the role of pharmacists in society	6	3
		7	2
		8	3
		9	3
		6	2
A03.	Be able to solve the queries of survey participants	3	3
A04.	Be trained more on time management and target completion	2	3

D. **Rate the Outcome: This survey-based project helped you to**

Q. No.	Question	AO mapped
Q1	Explain the rationale behind the inclusion of each of the questions in the questionnaire to the survey participants.	A01
Q2	Communicate the objective and scope of the survey to the participants.	A02
Q3	Resolve the queries raised by survey participants.	A03
Q4	To achieve the assigned number of participants.	A04
Q5	Become aware of my duty towards society as a pharmacy professional.	A02

IMPACT ANALYSIS FOR UG PROJECT (SURVEY BASED)

Please rate using the following key-

3: Strongly agree

2: Agree

1: Disagree

Sr No.	Student Name	PO6, PO7 PO4, PO5					Sign
		PO1	PO3	PO2	PO6, PO7 PO8, PO9		
1	Alhamkh Khan	3	3	3	3	3	Alhamkh
2	Pritya Choudhary	3	3	3	3	3	Pritya
3	Raksh Gupta	3	3	3	3	3	Raksh
4	Kapil Dargam	3	3	3	3	3	Kapil
5	Kapil Virck Denbani	3	3	3	3	3	Virck
6	Divya Dholam	3	3	3	3	3	Divya
7	Tanvi N. Dighe	3	3	3	3	3	Tanvi
8	Ketki Edlabadkar	3	3	3	3	3	Ketki
9	Taniya Fernandes	3	3	3	3	3	Taniya
10	Jidnyasa Gaje	3	3	3	3	3	Jidnyasa
11	Rashish Gupta	3	3	3	3	3	Rashish
12	Shruya Huggi	3	3	3	3	3	Shruya
13	Alisha Hussain	3	3	3	3	3	Alisha
14	kshiti Jannik	3	3	3	3	3	Kshiti
15	GAYATRI JOSHI	3	3	3	3	3	Gayatri
16	Rutuja Joshi	3	3	3	3	3	Rutuja
17	Jyoti Tanwar	3	3	3	3	3	Jyoti
18	Sanjana Kadam	3	3	3	3	3	Sanjana

IMPACT ANALYSIS FOR UG PROJECT (SURVEY BASED)

19	Preet. B. Koviva	3	3	3	3	3	Preet
20	Anam Abdul Salam Kazi	3	3	3	3	3	Anam
21	Bhagyashree B. Mungani	3	2	3	3	3	Bha
22	DM Vazma	3	3	3	3	3	DM
23	Khushbu Choudhary	3	3	3	3	3	Khushbu
24	Divya Kulkarni	3	3	3	3	3	Divya
25	Riddhi Kule	3	3	3	3	3	Riddhi
26	SOHAM LAKHATSIAS	3	3	3	3	3	Soham
27	Pauline Pughalkar	3	3	3	3	3	Pauline
28	Srushti Bhide	3	3	3	3	3	Srushti
29	Vedangi Sawant	3	3	3	3	3	Vedangi
30	Ananya Putey	3	3	3	3	3	Ananya
31	Harshita Jain	3	3	3	3	3	Harshita
32	Kimaya Waghole	3	3	3	3	3	Kimaya
33	Shraddha Shetty	3	3	3	3	3	Shraddha
34	Purnima Thorat	3	3	3	3	3	Purnima
35	Vaishnavi Pawar	3	3	3	3	3	Vaishnavi
36	Chaitrali Shivalkar	3	3	3	3	3	Chaitrali
37	Sayali Varange	3	3	3	3	3	Sayali
38	Aaryan Pathe	3	3	3	3	3	Aaryan

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IMPACT ANALYSIS FOR UG PROJECT (SURVEY BASED)

39	Avinash. S. Jaiswal	3	3	3	3	3	<u>AS</u>
40	Jasheen - C. Patil	3	3	3	3	3	<u>J Patil</u>
41	Ritika Mule	3	3	3	3	3	<u>Rmule</u>
42	Brayden Pranza	3	3	3	3	3	<u>Brayden</u>
43	Sarang Lakhote	3	3	3	3	3	<u>S</u>
44	Shreya S. Patil	3	3	3	3	3	<u>Spatil</u>
45	Nikita Patil	3	3	3	3	3	<u>N Patil</u>
46	Srushti Agnihotri	3	3	3	3	3	<u>Srushti</u>
47	Mamata Chaurasiya	3	3	3	3	3	<u>Mamata</u>
48	Kishita Deore	3	3	3	3	3	<u>K Deore</u>
49	Shital Girwad	3	3	3	3	3	<u>Shital</u>
50	Vivek More	3	3	3	3	3	<u>V More</u>
51	Ishika Sharma	3	3	3	3	3	<u>Ishika</u>
52	Ganesh Kadi	3	3	3	3	3	<u>G Kadi</u>
53	Atmaj Sarkale	3	3	3	3	3	<u>Atmaj</u>
54	Tanay Bagwe	3	3	3	3	3	<u>Tanay</u>
55	Neelam Roge	3	3	3	3	3	<u>Neelam</u>
56	Parth Sawant	3	3	3	3	3	<u>P Sawant</u>
57	Ruj Patil	3	3	3	3	3	<u>R Patil</u>
58	Som Patil	3	3	3	3	3	<u>S Patil</u>

IMPACT ANALYSIS FOR UG PROJECT (SURVEY BASED)

59	Sakshi Tandel	3	3	3	3	3	Sakshi
60	Diksha Kharade	3	3	3	3	3	Diksha
61	Yashika Totani	3	3	3	3	3	Yashika
62	Yash Bagwe	3	3	3	3	3	Yash
63	Pooja Goyal	3	3	3	3	3	Pooja
64	Simran Nagde	3	3	3	3	3	Simran
65	Shreya Saliya	3	3	3	3	3	Shreya
66	Aayush Umbar	3	3	3	3	3	A-1
67	Shreya Shedge	3	3	3	3	3	Shreya
68	Riya Shankar	3	3	3	3	3	Riya
69	Velena Mehta	3	3	3	3	3	VRMehta
70	Nandini Shukla	3	3	3	3	3	Nandini
71	Saniya Pillikandlu	3	3	3	3	3	Saniya
72	Kalyani Panturkar	3	3	3	3	3	Kalyani
73	Ramya T Pillai	3	3	3	3	3	Ramya
74	Yutika Poojary	3	3	3	3	3	Yutika
75	Sakshi Nune	3	3	3	3	3	Sakshi
76	Akshata Shinde	3	3	3	3	3	Akshata

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IMPACT ANALYSIS FOR UG PROJECT (SURVEY BASED)

77	Yamhika Sharma.	3	3	3	3	3	Yamhika
78	Srushti. helalkar	3	3	3	3	3	Srushti helalkar
79	Archie N. Jaiswal.	3	3	3	3	2	Archie
80	Devaansh .A.Ambardekar	3	3	3	3	3	Devaansh
81	Shravani. G. Mali	3	3	3	3	2	Shravani
82	Kashish K. Mali	3	3	3	3	3	Kashish
83	Bhumika A. Solanki	3	3	3	3	3	Bhumika
84	Shweta Baranwal	3	3	3	3	3	Shweta
85	Rishika Gupta	3	3	3	3	3	Rishika
86	Vaishnavi Sethi	3	3	3	3	3	Vaishnavi
87	Rutuja R. Dongade	3	3	3	3	3	Rutuja
88	Khushi Tiwari	3	3	3	3	3	Khushi
89	Sujal Gadiya	3	3	3	3	3	Sujal
90	Vipul Mahajan	3	3	3	3	3	Vipul
91	Vedant Singh	3	3	3	3	3	Vedant
92	Gnehal Rajguru.	3	3	3	3	3	NEHAL
93	Abhishek Tiwari	3	3	3	3	3	Abhishek
94	vishwalee Patil	3	3	3	3	3	vishwalee
95	Shalom Sathe	3	3	3	3	3	Shalom
96	Spareton S. dekar	3	3	3	3	3	Spareton

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IMPACT ANALYSIS FOR UG PROJECT (SURVEY BASED)

97	Chaitrali Waingankar	3	3	3	3	3	(3/3)
98	Sarves . S. Parab	3	3	3	3	3	3
99	Vidhi Pingale	3	3	3	3	3	3/3
100	Vignesh Patil	3	3	3	3	3	3
101	Bilal Khan	3	3	3	3	3	3/3
102	Ajit Yangan	3	3	3	3	3	3/3
103	Harsh . Nangare	3	3	3	3	3	3/3
104	Tanvi . V. Hare	3	3	3	3	3	3/3
	Average	3	2.99	3	3	2.99	
	% response of students given 3 or more than 3	100	99.04	100	100	99.04	
	PO attainment Level	3	3	3	3	3	

Any suggestions to improve the activity/ achieve the outcomes of the activity.

Name & Signature of Activity Co-ordinator:

Ms. Palak Karia



Mr. Ojaskumar Agrawal



VES College of Pharmacy, Mumbai
Hashu Advani Memorial Complex, Collectors Colony, Chembur, Mumbai - 400 074

REPORT ON UG PROJECT (Survey based)
2022-23

F. Y. B. Pharm (Div A and Div B)

Total Response collected: 871

Following are the conclusions drawn based on the surveys taken by students:

- 52.2% of people claim that their surroundings are clean.
- 7.5% of people claim that their surroundings are not so clean.

- 81% of people are satisfied with the garbage disposal system in their surroundings.
- 18.9% of people are not satisfied with the garbage disposal system in their surroundings.

- 61.9% of people feel that garbage collection and segregation is frequent in their area.
- 7.5% of people feel that garbage collection and segregation is not so frequent in their area.

- 88.7% of people are aware of the diseases spread by unhygienic conditions.
- 11.3% of people need to be aware of the diseases spread by unhygienic conditions.

- 9.2% of people agree that they are not very involved when it comes to keeping their surroundings clean.
- 42.6% of people agree that they are involved when it comes to keeping their surroundings clean.

- 68.3% of people agree that they have a proper drainage system in their area.

- 10.8% of people need attention for the construction of proper drainage systems in their area.
- 45.9% people agree that the garbage is well segregated into wet, dry, and sanitary before collection in their area.
- 17% people agree that the garbage is not segregated into wet, dry, and sanitary before collection in their area.

- 53.2% of people claim that they live in a clean, healthy, and safe environment during this pandemic situation.
- 7.5% of people claim that they are not living in a clean, healthy and safe environment during this pandemic situation.

- 63% of people claim that they have a proper disposal system in their locality.
- 11% of people claim that they do not have a proper disposal system in their locality.

- 56.9% people claim that the road are cleaned regularly in their locality.
- 4.6% people claim that the road are not cleaned regularly in their locality.

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Hashu Advani Memorial Complex, Collectors Colony, Chembur E, Mumbai - 400 074 MS

2022- 23

UG PROJECT (Survey based)

F. Y. B. Pharm Sem II

EVS based survey

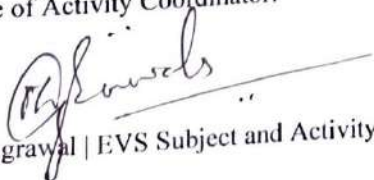
The survey based UG project is an initiative undertaken by VESCOP for the past few years. This UG project is given to students of First Year B. Pharm.


Under this activity, survey questionnaires encompassing various environmental aspects are designed by activity coordinators. The target area to undertake the designed survey is also selected by activity coordinators. Each student of F. Y. B. Pharm must take the survey by asking enlisted questions to the target population (Minimum 5 people). The survey is analyzed based on the answers given by the target population and a report is generated.

This survey-based activity serves as the basis for one of the methods of literature survey which will help to inculcate research perspective in students. Being a preliminary step towards research-based projects, the activity is suitable for students of F. Y. B. Pharm under which students will learn to communicate the objective and scope of the survey to participants. Students will also learn to achieve the assigned number of target participants and resolve the queries raised by survey participants. At the end of the activity, students will become more aware of concerns regarding environmental issues and will be encouraged to take steps towards resolving the same.

The findings of the survey are directly correlated to one of the weekly mapping PO's.

Name and Signature of Activity Coordinator:


1. Mr. Ojaskumar Agrawal | EVS Subject and Activity Incharge | VESCOP


2. Ms. Palak Karia | EVS Subject and Activity Incharge | VESCOP

VIVEKANAND EDUCATION SOCIETY'S COLLEGE OF PHARMACY
Hashu Advani Memorial Complex, Behind Collector Colony
Chembur, Mumbai- 400 074

INDUSTRIAL VISIT REPORT

DATE: 5th August 2022

VENUE: GLENMARK PHARMACEUTICALS LIMITED, RESEARCH CENTRE

A-607, MIDC Industrial Area, Mahape, Navi Mumbai 400 709 TIME: 10:00 AM- 12:30 PM

No of students: 22

About the Company: Glenmark Pharmaceuticals was incorporated in India in the year 1977. The company has its research and development centres at four locations in India- Taloja, Mahape, Sinnar and Turbhe. The R&D centre at Mahape is involved in formulation and analytical development, and the discovery of New Chemical Entities (NCEs) from target selection to clinical development.

Research activities carried out at the research facility at Mahape, Navi Mumbai:

- 1) Process and Analytical Chemistry
- 2) Discovery of Bulk Actives
- 3) In-vitro and In-vivo studies
- 4) Tissue Culture
- 5) Toxicology Studies
- 6) Pharmacokinetics
- 7) Project Management
- 8) Clinical and Regulatory Affairs

Global Presence of Glenmark:

- 1) Biologics R&D Centre at Neuchatel, Switzerland
- 2) Biologics R&D Centre at Lausanne, Switzerland
- 3) Clinical Research Centre at Paramus, USA

Departments in R&D Centre at Mahape:

- 1) Analytical Drug Discovery and Development
- 2) Information Centre
- 3) Pharmacokinetics Metabolism

- 4) Toxicology
- 5) In-vitro and In-vivo Testing
- 6) Tissue Culture
- 7) Animal House

ANIMAL HOUSE FACILITY:

The animal house consists of 14 rooms on the first and second floors and 8-10 breeding rooms for breeding experimental animals on the ground floor. No more than 2 to 3 personnel are permitted entry in the breeding area. The facility is strictly by the needs, considering the environmental, equipment and biosafety level required as per the CPCSEA guidelines concerning experiments on animals. The personnel involved in the care and maintenance of experimental animals are explicitly dedicated to specific areas of the animal house and are restricted from entering other areas not designated for them. There are dedicated personnel for handling of water supply, steam sterilization or autoclaving of instruments used and several other activities in the animal house. Entry to the experimental rooms is restricted only to authorized personnel and the personnel must use the air shower before stepping into a clean passage. The area before the pass box is considered the dirty corridor for the movement of hazardous and contaminated material to avoid cross-contamination. Right after the pass box, starting from the clean passage, the entire animal house is equipped with High-Efficiency Particulate Air (HEPA) filters maintaining a Laminar Air Flow (LAF).

The facility has an autoclave, air handling unit and feed storage rooms. The animals are kept in Individual Ventilated Cage (IVC) systems which make use of HEPA filters that defend them from micro-organisms ensuring they are fully protected. The IVC includes a cage bottom, a cage top (with a food hopper and water bottle holder incorporated) and a filter lid. An external ventilation unit supplies the cages with fresh HEPA-filtered air which passes through the filter lids. All items passed into the barrier unit including bedding material, food, etc. must be sterilized by autoclaving. Mice and rats in the animal house can survive for 75 long hours in IVC systems without a supply of food and water. Bedding material must be changed at regular intervals depending on the cage size and the number of animals housed within. For cages with 8-9 rats in each, bedding material is changed thrice a week. The feed for experimental animals comprises a 20-22% protein diet whereas for animals being bred, it consists of 18% proteins. The water used is RO purified.

Strains of experimental rats are:

- C57- BL6: Dark black coloured rats used for tumour studies.
- BALB-C: White-coloured rats used for inflammatory and asthma studies.
- Sprague Dawley Rats

Each experimental room consists of IVC systems and a cage changing station with Laminar Air Flow (LAF) where activities like measurement of tumour size in drug-treated animals are

performed. The environmental conditions in experimental rooms are maintained and regulated by a Building Management System (BMS). Temperature is maintained at $22\pm 2^{\circ}\text{C}$ and humidity in the range of 60-70% RH with the help of a dehumidifier.

Details mentioned on each cage are:

- Name of investigator
- Experimental Code
- Dose to be administered
- Start and end dates of the experiment



VIVEKANAND EDUCATION SOCIETY'S COLLEGE OF PHARMACY
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INDUSTRIAL VISIT REPORT

Venue- Haffkine Institute for Training, Research & Testing

Acharya Dhonde Marg, Parel Village, Parmanand Wadi, Parel, Mumbai, Maharashtra: 400012

No of students: 23

Time of Visit- 8th Sep 2022 (9:30 am to 2 pm)

The Haffkine Institute is in Parel in Mumbai. It was established on 10th August 1899 by Dr. Waldemar Mordecai Haffkine. The institute now serves as a teaching institution in the field of biomedical sciences and is affiliated with the University of Mumbai. We reached the Haffkine Institute at 9:30 AM by train and the nearest station was Parel. The process of registration was smoothly managed by the authorities in charge. The institute conducts many toxicology studies in compliance with the CPCSEA guidelines. The institute thus must justify the use of the number of animals required for this study while presenting the protocol before the IAEC authorities. Therefore, the institution is required to give a detailed explanation and the need for the studies carried out and why the number of animals used in the studies are a part of preclinical experiments. As we entered the institution, we were first shown separate buildings from outside. Firstly, it consisted of the Animal House of the facility and the details of the animals procured. We were led to their housing areas which were located separately from personal areas such as offices and laboratories.

The Briefing: We were briefed about the itinerary in the conference room in the main building and then divided into groups of 8 to visit the animal house. About 5 years ago, the Institute stopped housing snakes in the Serpentarium. It was used to study the venom of different snakes and make them. A few years ago, 'large animal' facilities were also eliminated from the institutions.

The Animal House Facility:

To avoid contamination, we were outfitted with special lab clothing and headgear. As we entered the facility in our lab coats and protective gear, there was an air system in place to decontaminate us, and we entered the clean passage. The first two rooms contained several cages and a laminar flow work area for dissection or administration, as well as rat housing. There were different sections in the animal house and on the main door of each of these sections, which were isolated from each other, were clear instructions and protocols to be followed while entering or while inside these rooms. Each room had a proper ventilation system to ensure the circulation of clean air in the room. They also had adequate air conditioning in place along with a humidifier to control the humidity and temperature of these rooms. Naturally, they had a proper monitoring system in place to monitor these parameters. The rooms had Wistar Rats and Albino Mice and some of them were being used for ongoing clinical

studies. They also had Rabbits kept under observation These rabbits were used for studying the breeding of mosquitoes in their fur.

These rabbits were a bit overweight and relatively old and thus the institution sought permission for the euthanization of these rabbits. Then we went into another room which consisted of a dissection chamber, an anaesthesia chamber, a euthanizing chamber (CO₂ saturated), and several equipment's for spectroscopy, fluorimetry, and a Rotarod apparatus. A new software system for tracking mouse behaviour in a maze was introduced to us, which enabled accurate results and favoured less time-consuming procedures. This software could be used to conduct a variety of anxiolytic CNS experiments. We were later taken to the Haffkine Museum. This museum takes visitors through the history of Bombay during the plague, demonstrating how the epidemic forced the governor of Bombay to relocate. There is a wealth of information available about Haffkine, his discovery that ended the epidemic, and the equipment and materials he used. There is also information about microbiology and bacteriology, as well as interesting displays such as a cloning diorama.

The magnificent museum in the historic mansion with Portuguese architecture reveals life sciences, microbiology, and the glorious past of this Institute and the world of Dr. Waldemar Mordecai Haffkine. It also has a snake section with original skeletons of adult and juvenile snakes. A wet display of semi-venomous and venomous snakes is possible. Here, in addition to replicas of several crawling and flying insects like mosquitoes, flies, cockroaches, and bed bugs, is a wet display of semi-venomous and venomous snakes. Some of the authentic insect collections on exhibit date back to 1924. The tools used to handle snakes and the shed snake skins are also on show. There is also a video showing the raw snake venom and how it is milked. On display are transparent sculptures of the five most important microorganisms, including the human immunodeficiency virus, rabies virus, influenza virus, E. coli, and Bacteriophage. Flask containing goat flesh and goat ghee spread upon which the bacteria causing plague- *Yersinia pestis*, whose active metabolites were used in vaccine development was on the display.

Conclusion: It was a very informative visit with deep insights into the world of small animal studies and the toxicity studies conducted on them. The monuments and sculptures in the Haffkine Museum were well maintained and the remains were preserved to enhance the knowledge of learners.



Formulation Development Practice scxhoo,,I Industrial Visit to IQGenX; 1/10/2022

	Formulation Development	Attendance
1	Sneha Pillai	P
2	Apurva Prasanna Bakre	P
3	KOLPE RUTURAJ ABHIJEET	P
4	Anjali Dighe	P
5	Anuradha Suhas Badade	P
6	Balaji Yadav	P
7	Suprita Prasanna Bhide	P
8	Sanjana Vijay Yadav	P
9	Janhavi Pakale	P
10	Shrutika Shailesh Date	P
11	Saloni Rane	P
12	Rajpreet KaurButtar	P
13	Shrutika Dongre	P
14	GourabPandey	P
15	Maya Mhatre	P
16	Rhutuja VishwanathPotekar	P
17	ChinmayPhatak	P
18	Mansi ShankarGurav	P
19	Kajal Sureshchandra Gupta	P
20	Namita Doke	P
21	Shetkar Chaitrali Narendra	P
22	Srishti Gupta	P

Formulation Development Practice scxhoo,,l Industrial Visit to IQGenX; 1/10/2022



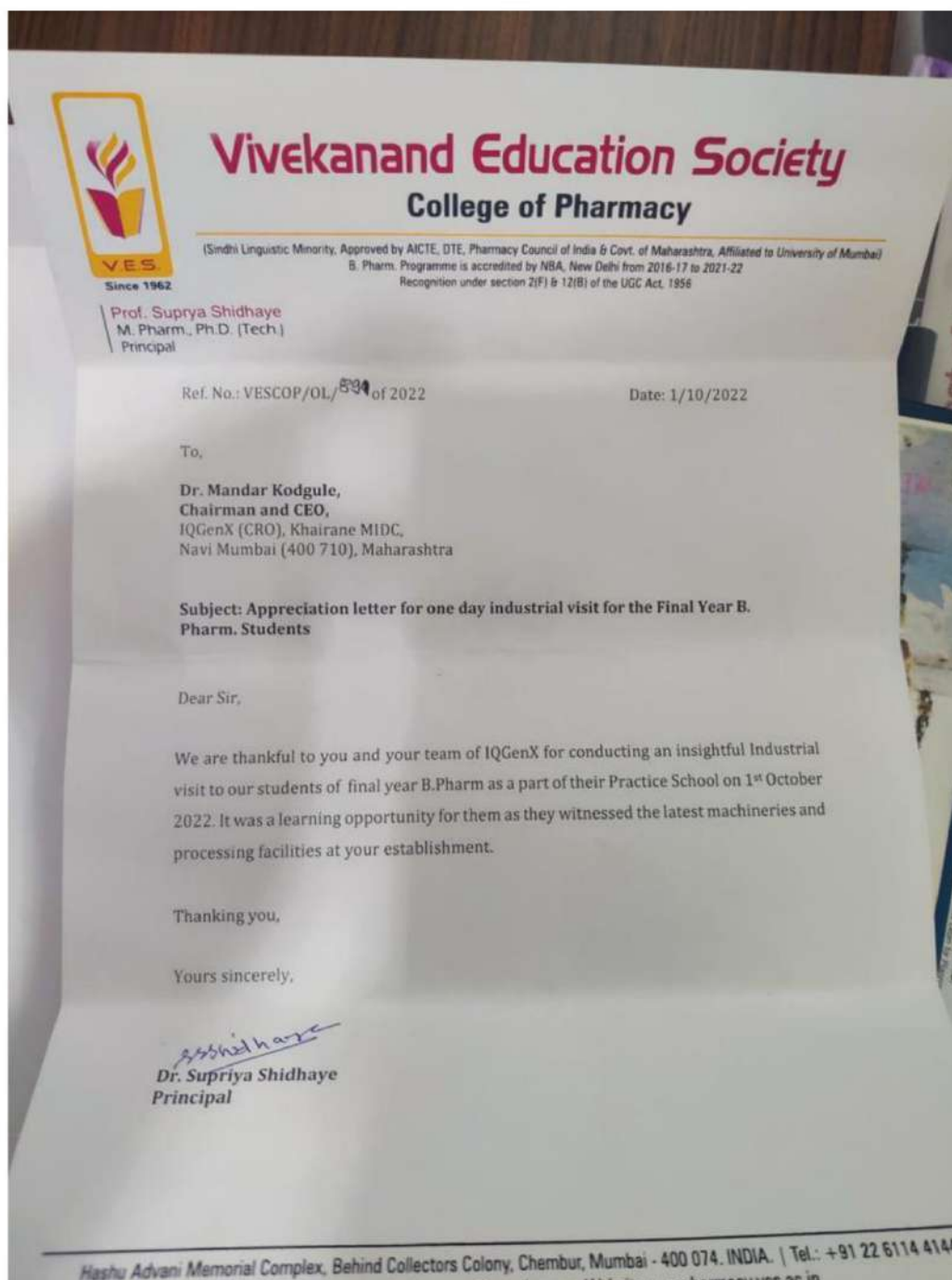
Formulation Development Practice scxhoo,,I Industrial Visit to IQGenX; 1/10/2022



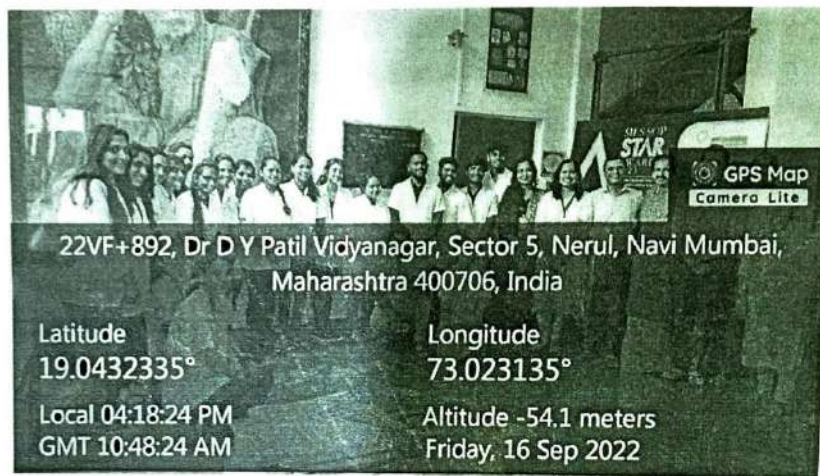
Formulation Development Practice scxhoo,,l Industrial Visit to IQGenX; 1/10/2022



Formulation Development Practice school, Industrial Visit to IQGenX; 1/10/2022



**REPORT ON
INDUSTRIAL VISIT
TO
SIES SCHOOL OF PACKAGING
NERUL, NAVI MUMBAI**



Introduction:

We undertook an enriching industrial visit to SIES School of packaging, a distinguished provider of analytical instruments and testing equipment. The visit aimed to familiarize participants with the applications and workings of Gas Chromatography Mass Spectrometry (GC-MS) alongside other instrumental testing techniques.

Gas Chromatography Mass Spectrometry (GC-MS):

The visit commenced with an insightful overview of GC-MS, an analytical method combining gas chromatography and mass spectrometry to identify substances within a test sample. Participants gained a comprehensive understanding of gas chromatography (GC), utilized for separating and analyzing compounds that can be vaporized without decomposition, and mass spectrometry (MS), employed to measure the mass-to-charge ratio of ions. Further insights were provided into the purge and trap GC-MS method for analyzing volatile compounds, highlighting its application in various fields such as drug detection, environmental analysis, explosives investigation, and identification of unknown samples.

Other Instruments:

Participants were introduced to a range of instrumental testing equipment, including the Scuff Tester, Bursting Strength Tester, Puncture Tester, Melt Flow Index Tester, and Taber Stiffness Tester. These instruments serve diverse purposes in evaluating the physical properties and characteristics of materials such as rub resistance, bursting strength, puncture resistance, and stiffness. Additionally, the visit provided a glimpse into other analytical techniques such as High-Performance Liquid Chromatography (HPLC) and Fourier-transform Infrared Spectroscopy (FTIR), further enriching participants' knowledge of analytical instrumentation.

Conclusion:

The industrial visit to [Company Name] provided participants with valuable insights into the applications and workings of Gas Chromatography Mass Spectrometry (GC-MS) alongside other instrumental testing techniques. The experience enhanced participants' understanding of analytical instrumentation and its diverse applications across various industries, contributing to their overall knowledge and skill development in the field of analytical chemistry and materials testing.

Sincerely,



Prepared by:
Mr. Jayesh Patil



Reviewed & Approved by:
Dr. Anita Ayre

Smt. B. L. Boda

Introduction:

We embarked on an insightful industrial visit to [Theta beta Analgorithm a leading provider of analytical and pharmaceutical equipment. The visit aimed to provide participants with practical insights into the processes and technologies employed in preparative high pressure liquid chromatography (HPLC) and formulation development.

Preparative High Pressure Liquid Chromatography (HPLC): The tour commenced with an overview of the preparative HPLC facility, showcasing the utilization of an Agilent 1262 Infinity II series system for isolating and purifying valuable compounds. Participants gained valuable insights into the key components of the system, including solvent reservoirs constructed of glass or stainless steel, pumps capable of high flow rates, and preparative injectors such as the Rheodyne injector. Additionally, participants observed large preparative columns produced by DynammaR, which play a vital role in the isolation and purification of compounds on an industrial scale.

Formulation Development Department: The visit then transitioned to the Formulation Development Department, where participants were introduced to the Franz Diffusion Cell, manufactured by Loga. This apparatus serves as a reproducible method for in vitro drug release testing from topical formulations. Participants learned about the system's ability to mimic the skin environment using synthetic membranes or human skin for in vitro or in vivo release testing. Furthermore, participants gained practical insights into additional instruments utilized in the department, including tablet hardness testers, electronic moisture balances, and disintegration apparatuses, which play crucial roles in quality control and formulation development processes.

Conclusion: The industrial visit to [Company Name] provided participants with valuable practical insights into the processes and technologies employed in preparative HPLC and formulation development. The experience enhanced participants' understanding of industrial-scale chromatography and formulation testing techniques, contributing to their overall knowledge and skill development in the pharmaceutical industry.



Prepared by:
Ms. Selva Malvika



Reviewed & Approved by:
Dr. Anita Ayre

VES COLLEGE OF PHARMACY

Hashu Advani Memorial Complex, Behind Collector Colony, Chembur (E), Mumbai - 400 074

ATTENDANCE RECORD

(Duly filled attendance sheet is to be submitted by the Subject Teacher to the Class Teacher at the end of Semester Term or as and when required.)

Final Y. B. Pharm.: Sem. VII Subject: Practise School for Quality Control & Quality Assurance (QC & QA) (Practice School)

Attendance for the month: July, Aug and September, 2022 Academic Year: 2022-23

Activity Coordinator - D. Anurag, Dr. D. J. Patil, Dr. Ajay, Mrs. Ashwini Wani, Dr. Nutan Rao, Mr. Sanku Patil

Sr. No.	Name	Date												Remarks	
		22/7	23/7	24/7	5/8	6/8	20/8	12/8	13/8	20/8	14/9	23/9	24/9		30/9
1	Sakshi Shiraskar	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>
2	Sundaram Shukla	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>	<u>Sundaram</u>
3	Tanvi Shivnekar	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	A	A	A	A	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>
4	Samruddhi Santosh Ghorpade	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>	<u>Samruddhi</u>
5	Paste Kasturi Sanjay	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>	<u>Paste</u>
6	Fernando Selva Malavika Anthony Peter	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>	<u>Fernando</u>
7	Sakshi Kashinath Bagal	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>	<u>Sakshi</u>
8	Tanvi Ajit Dalvi	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>	<u>Tanvi</u>

IR Basics (13-14/7)
 Synthesis of (13-14/7)
 Benzocaine (15-16/7)
 IR Intuipret (17-18/7)
 TLC reaction monitoring (19-20/7)

IR of PABA
 Benzocaine impurity

IR of elugad drug impurity

		5/6/22 6/8/22						12/7 23/09						30/9
9	Hreesheeka Mungekar	KA	KA	KA	KA	KA	KA	KA	KA	KA	KA	KA	KA	KA
10	Reshma Kushappa Mane	PMona	PMona	PMona	PMona	PMona	PMona	PMona	PMona	PMona	PMona	PMona	PMona	A
11	Kirandeep Parihar	RS	A	RS	RS	RS	A	A	A	A	R	R	R	R
12	Samiksha Pujare	SPujare	SPujare	SPujare	SPujare	SPujare	A	A	SPujare	SPujare	SPujare	SPujare	SPujare	SPujare
13	Bhagyashree Sunil Dahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale	BDahiphale
14	Hrishitaa Ashok Kandpal	HKandpal	HKandpal	HKandpal	HKandpal	HKandpal	A	A	HKandpal	HKandpal	HKandpal	HKandpal	HKandpal	HKandpal
15	Nawani Mamta	M	M	M	M	M	M	M	M	M	M	M	M	A
16	Jayesh Dileep Patil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil	JPatil
17	Mayur Santosh Keny	MKeny	MKeny	MKeny	P	A	MKeny	MKeny	A	MKeny	MKeny	MKeny	MKeny	A
18	Sawant Tanushree Sanjay	TSawant	TSawant	TSawant	TSawant	TSawant	TSawant	TSawant	A	TSawant	TSawant	TSawant	TSawant	TSawant
19	Preeti Kamal Mirani	K	K	K	R	R	A	A	R	R	R	R	R	A
20	Omkar Krishna Toke	OToke	OToke	OToke	OToke	OToke	OToke	OToke	OToke	OToke	OToke	OToke	OToke	A
21	Shweta sadashiv tupe	STupe	STupe	STupe	STupe	STupe	STupe	STupe	STupe	STupe	STupe	STupe	STupe	A
22	Gerard Fernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes	GFernandes

Module Coordinator - Dr. Anurag Lohar
30/6/22

VIVEKANAND EDUCATION SOCIETY'S COLLEGE OF PHARMACY
Hashu Advani Memorial Complex, Behind Collector Colony,
Chembur, Mumbai- 400 074

INDUSTRIAL VISIT REPORT

DATE: 7th September 2022

VENUE: Tata Institute of Fundamental Research (TIFR)

Dr Homi Bhabha Road, Navy Nagar, Colaba, Mumbai.

TIME: 2:00 PM- 4:30 PM

ABOUT THE INSTITUTE:

Tata Institute of Fundamental Research is a publicly deemed research university located in Mumbai, India. The institute is renowned for basic research in mathematics and sciences. The institute was founded by Dr Homi Bhabha with the support of J.R.D. Tata in 1945. TIFR is a premier institute that functions under the Department of Atomic Energy of the Government of India and is funded by the Tata Trust. The institute was founded by the collective efforts of the Chairman of Tata Group, J.R.D. Tata, the Former Prime Minister of India, Pandit Jawaharlal Nehru, the Former Defence Minister of India, Krishna Menon, and the Father of the Indian Nuclear Program, Dr Homi J. Bhabha. Research at TIFR initially started in the domain of physics and today it has extended to chemistry, biology, mathematics, computer science, and life sciences. The main campus of TIFR is in Mumbai and it has its branches in Pune, Bengaluru, and Hyderabad.



ANIMAL EXPERIMENTATION: ZEBRAFISH MODEL

Drosophila is one of the older animal models used at the institute among others. The youngest is the zebrafish model. The two popular emerging models for animal studies are Zebrafish and Madana fish. These models are now extensively used for developmental studies, molecular genetics, embryology, and cancer biology. Zebrafish (*Danio rerio*), the Indian River Fish, is a white and blue-striped freshwater fish inhabiting the tributaries of Ganga and Brahmaputra. This model was discovered by Hamilton in 1822 and was first used as a biological research model by George Streisinger in 1970 for genetic analysis. Since then, more than 21 different varieties of zebrafish have been discovered. Boston has the biggest zebrafish facility in the world with around 300 units. The fish at the centre are fed by an automatic robotic system that can be programmed to distribute food to many individual fish tanks at a specified time. The most popular project undertaken on zebrafish animal models at the University is the Chemical Mutagenesis Project.



Reasons for the growing use of Zebrafish Model:

- Vertebrate animals with >70% genetic homology with humans.
- Greater similarity of the Electrocardiogram (ECG) of humans with zebrafish than with rodents.
- High genetic manipulation possible.
- Development of 50- 600 potentially viable embryos at a time indicating a very high fertility rate which justifies its usefulness for high throughput studies.
- Brief gestation period.
- Transparency of embryos at early stages allows for real-time observation of organ development.
- External fertilization and development outside the mother's womb help in easier maintenance and retrieval of embryos for the study and pave the way for efficient breeding.
- Cheaper husbandry
- Rapid embryonic cell division.

Anatomy of Zebrafish:

Being the lower vertebrates, zebrafish are devoid of lungs and respire through gills. They show the presence of a swim bladder for buoyancy. Elongated kidneys are located below the vertebral column. Zebrafish possess a two-chambered heart with one auricle and one ventricle for pumping the blood throughout the body in single circulation. It is amazing to know that 20%

of the ventricular portion removed from the heart of zebrafish can fully regenerate in less than 2 months.

Housing Conditions:

Maintaining the quality of water in a zebrafish facility is a major challenge. Static/ non-circulated water in fish tanks must be changed at regular short intervals and those tanks should not accommodate more than three fish per litre of water. There is also provision for an automatic system of re-circulated/ moving water wherein the same water is recycled after passing through a series of filters thereby reducing the risk of contamination as well as the frequency of changing the water. Tanks with such re-circulated water systems should contain 8-10 fish per litre and be washed every 2-3 months. Another crucial parameter to be taken into consideration in a zebrafish facility is the temperature of water in fish tanks which should be controlled in the range of 28- 29°C. Any fluctuation in this range would directly affect the quality of life of the zebrafish. A temperature rise would lead to a drop in the levels of oxygen in the water which in turn would not support the survival of nitrogen-fixing organisms in water. In the absence of nitrogen fixers, conversion of ammonia to nitrite and nitrite to nitrate would not take place resulting in increased concentration of harmful gases in the water.

Limits to be complied with are:

- pH= 6.8- 8.5
- Conductivity= 100- 1000 ohms
- Alkalinity= 50-75
- Hardness= 75- 200 (stable water)
- Total Ammonia Concentration= 0 mg/l
- Nitrite concentration= 0 mg/l
- Nitrate concentration= 50 mg/l
- Carbon dioxide concentration= NMT 20 mg/l

In case of accumulation of harmful gases in the water, the tank should be cleaned once a week.

Developmental Stages of Zebrafish:

1) Embryo (1-3 days):

First cell division occurs in zygote after 45 minutes of fertilization followed by subsequent divisions at an interval of 15 minutes each. Stages formed after the cleavage of zygote are blastula and gastrula. Inside the chorionic membrane, the embryo undergoes rapid cell division.

2) Larva (4-29 days):

It is formed after the embryo hatches. Types of larval stages are swimming, early and mid-stage larvae.

3) Juvenile (30-59 days)

4) Adult (>60 days)

Sexual differentiation of male and female occurs after 2- 2.5 months of fertilization. Female fishes have a round body with white coloration whereas the body of males is plain and golden in appearance. These features are significant in distinguishing males from females. Lifespan of zebrafish is 3- 5 years. However, their breeding potential declines after 1-2 years and they develop diseases suggesting the need to be discarded.

Rapid occurrence of mutations in the aging zebrafish may serve as an excellent model for genetic studies.

Feed for Zebrafish:

★ dpf- days post fertilization

No external feed should be provided for 0- 5 dpf. Live feed consisting of Artemia, Rotifers and Paramoecium can be given 13- 60 dpf. Live feed combined with fake diet is provided 61- 120 dpf.

Methods of Anaesthesia:

Tricaine methanesulfonate (50 mg/l) is the most used anaesthetic agent for anaesthetizing the embryo. For larval stages, hypothermia is the best method. Larval stages require 10% more amount of anaesthetic agent than the embryonic stages. Males can be anaesthetized in just 15- 20 seconds while female fishes take longer.

Methods of Euthanasia:

Developmental stages can be euthanized 1 to 15 days post fertilization by immersion in ice water, overdose of anaesthetic agent or addition of bleaching solution. Larvae are euthanized by direct transfer to paraformaldehyde. 15 days post fertilization, euthanasia is performed by direct decapitation using a sharp blade or by immersion in clove oil. No regulatory approval is required for experimentation on zebrafish for 1- 3 days post fertilization. However, as cognizance begins to develop in the animal after 7 days, approval from IAEC becomes mandatory.

Scope of Zebrafish Model in Biomedical Research:

The Zebrafish Model is gaining far-reaching acceptance and is becoming increasingly popular due to the various advantages it offers. Its contribution to research on a multitude of genetic disorders in humans is commendable. The model can be used to study recessive genes which are the silent carriers of genetic diseases by irradiation of eggs to keep the sperms alive to be able to study the paternal genes. Microinjection of embryos with chemical agents is of great importance to carry out chemical toxicity studies. The clinical sign to assess the development of toxicity is the lack of detachment of the tailbone. Fish embryo toxicity helps in the determination of LC-50 value for a drug. Gene Knock Down effect can be evaluated using Morpholino injections. The model is widely used in the study of angiogenesis, morphogenesis, organogenesis, apoptosis, cancer biology and therapeutics. Specific detectable oncogenes responsible for carcinogenic mutations in humans can be introduced in zebrafish models to

generate desired variants and investigate the course of disease progression further using high-end software. The Zebrafish model is also of importance in the research on drugs for tuberculosis.

ZEBRAFISH FACILITY AT TIFR:

TIFR boasts a distinguished zebrafish facility renowned for its extensive research on embryos. Both male and female zebrafish are intentionally cohabited within the same tank to maximize viable offspring production. Embryos are harvested from the tank bottom, with parents segregated using a permeable divider. Monthly expenses include up to Rs. 5 lakhs for feed and over Rs. 10 lakhs for filter maintenance. A sophisticated stereoscope microscope with dual eyepieces is utilized to obtain precise, three-dimensional observations of developmental stages.

During our visit to the facility, we had the opportunity to observe two key developmental stages of zebrafish: the blastula and larval stages. In the blastula stage, we observed dividing cells enclosed within the chorionic membrane. In the more advanced larval stage, distinct features such as the presence of yolk in the centre, 9T eyes positioned at either end, a visible heart, and elongated kidneys beneath the vertebral column were observed.

In 2021, the Guidelines for Ethical Use of Zebrafish in Research were released, providing important standards for the ethical treatment of zebrafish in scientific studies. Additionally, the book titled "The Zebrafish in Biomedical Research" offers practical methodologies for utilizing the zebrafish model effectively in bioscience research. This comprehensive resource covers approximately 35 distinct varieties of zebrafish, providing valuable insights into their unique characteristics and applications in biomedical research.

Other Zebrafish Facilities:

- Zebrafish International Research Centre (ZIRC)
- Chinese Zebrafish Research Centre (CZRC)





IIC 4.0 of VESCOP Announces Field Visit

Dear Students and Staff members,

The IIC 4.0 of VESCOP had is organizing a field visit to

Riidl - Research Innovation Incubation Design Labs
Somaiya Vidyavihar, Room No. 520, Bhaskarachraya Building, Vidyavihar,
Mumbai, Maharashtra 400077

on

8th of July 2022

Interested candidates kindly contact for registration

Dr Anita Ayre [97691 74278]

Wishing for your active participation

IIC 4.0 VESCOP team

Report on Visit to Incubation Centre at BioRIDL, Vikroli

On 8th July, 2022 the students of F Y M. Pharm had the privilege of visiting the Incubation Centre at BioRIDL Vikhroli. The visit provided a comprehensive insight into the vibrant ecosystem fostering innovation and entrepreneurship in the biotechnology sector. Participants witnessed firsthand the state-of-the-art facilities, collaborative workspaces, and mentorship programs tailored to nurture and accelerate the growth of startups and emerging ventures. The visit highlighted the invaluable role of BioRIDL Vikhroli in bridging the gap between academia and industry, facilitating research commercialization, and driving forward the biotechnology landscape in the region. Overall, the visit was highly informative and inspiring, offering participants a glimpse into the dynamic world of biotech innovation and entrepreneurship.

List of students who visited the Incubation centre:

Sr. No.	Name of the student
1	BARANWAL PRIYA KRISHNA
2	CHOUDHARY ROHAN NARAYANLAL
3	DAMA ANJALI ARVIND
4	GAVHALE AKASH VASANT
5	GUNJAL VAISHANAVI SHANKAR
6	KANADE ANKITA PRAKASH
7	MASHILKAR NIKITA SHAILENDRA
8	MONDKAR TANVI PRAVIN
9	NAIK SHARAYU SUNIL
10	PATIL SWAPNALI BHAGWAN
11	PAWAR YASH PRASHANT
12	SALMANIYA FARHEEN MOHAMMED AKRAM
13	syed abdul zahed syed abdul
14	TAMBOLI MITTAL SANJAY
15	CHOUDHARY ASHOK RAMLAL
16	DALVI AKANKSHA RAMESH
17	KHAN ASRIN ANWAR
18	KHANDAVE SHRUTI RAJENDRA
19	KULKARNI MRUNMAYEE PRASHANT
20	LAD AKANKSHA NAVALKUMAR
21	MISHRA VEDIKA SHRIRAM
22	MORE APEKSHA ARUN
23	MUNIPALLI VINMAYE ANUGNA
24	NAGARGOJE TEJESH UDDHAV
25	NAMADE MAYURI BHARAT
26	PANDEY VARSHA SUNIL
27	POWALE TANAYA NILESH
28	PRABHU NIRMITI BIPIN
29	SURYAWANSHI JAYASHRI SHASHIKANT
30	ADEN HUSNA SADIQUE
31	CHIMANE BHAIKAVEE BANDU
32	DESAI MAYURI DATTATRAY
33	GHONGADE KAVYASHREE DHANANJAY

34	MAHAJAN PIYUSH DIVAKAR
35	PATIL NIKITA GANGADHAR
36	PATIL SHEFALI SHEKHAR
37	POWAR ROSHANI DEEPAK
38	RAMUGADE TANVI MOHAN
39	SAWANT NEHA SANJAY



<https://api.mic.gov.in/uploads/institutes/monthlyReport/Photograph1/3818-IC201810235.jpeg>

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CiiA 2.0				
Sr. No.	Project Title	Student team members	Mentor	Stall No. allotted
1	Transdermal Delivery of Curcumin	1. Roohi Jaiswal 2. Sangeetha Veler 3. Kushal Mehta 4. Niyati Vagrecha 5. Kritika Shrivastava	Mrs. Pashpaleta Chougule	60
2	Multiluminator : Multimode Parallel Photochemical Resistor	1, Shreya Menon 2. Darsh Jain 3. Tanish Verma 4. Shantanu Bachhav	Dr Anand Chintakrindi	61
3	Ingenious antimalarial combination therapy	1) Tanvi Mondkar 2) Swapnali Patil	Dr. Harsha Kathpalia	62
4	Hibiscus and Piperine combination: A Novel treatment for Alopecia	1) Asmita Tripathi; 2) Varsha Pandey	Mrs. Vidhi Bhatia	63
5	BIOISOSTERIC REPLACEMENT IN Mtb DprE1 INHIBITOR 'CADD APPROACH'	1) Tanvi Mohan Ramugade	Dr Nutan Rao	64
6	Establishing Essential oil as Functional Excipients for Dermaceuticals: Bringing herbals into mainstream therapy	1) Akanksha Dalvi 2) Mayuri Namade 3) Ojas Gadre 4) Safina Shaikh 5)Rupaaya Buntwala	Mrs. Ashwini Wani	65
7	Design and Evaluation of Microsponge based formulation containing Synthetic and Herbal extracts	Ashok Ramlal Choudhary	Mr. Keyur shastri	66
8	Ready to use Iverdrops	1) Komal Chandra 2) Vaishnavi Sathe 3) Samiksha Mestry	Dr. (Mrs) Rajashree Hirlekar	67
9	Invisible Tapes for Corns and Caluses	1. Rohan Choudhary 2. Anika Raut 3. Shubheksha Rai	Dr. Harsha Kathpalia	68
10	PHINACO	1) Umang Sankhari 2) Ayushi Dumbre	Dr. Nutan Rao	69
11	Synthesis and In silico studies on potential Efflux Pump Inhibitors	1. Nikita Patil 2. Supriya Bhide 3. Siddhi Medke	Mrs. Sonali Munj	70
12	A Substitute Coating Solution Against Artificial Menace	1) Kumari Sneha 2) Rutuja Jagatkar 3) Soundarya Tharwi 4) Siddhant Kasebi	Dr. Reshma Tendulkar	71
13	Cloline: A Medicalized Antifungal Pantyliner	1. Akanksha Soman 2. Upasana Tiwari 3. Kishori Parab- 4. Dhanashri Kakada	Mrs. Mamta Venna	72
14	Cure for Cancer with negligible Side-effects	1) Tamarina Gidwani 2) Piyush Mahajan	Dr. Rajashree Hirlekar	73



Certificate Of Merit

Awarded to **SUPRITA BHIDE**
of **Vivekanand Education Society's College of Pharmacy** for Presenting an IDEA
for an Innovation Project **Synthesis & In Silico Studies on Potential Efflux Pump Inhibitors**
at the **CiiA-2 Innovation Exhibition** held on **1st - 3rd February 2023**
at **Nehru Centre, Worli, Mumbai.**




Rtn. Sachin Singhvi
President, Rotary Club of Bombay Worli
2022-23


Baldevkrishan Sharma
Chairman -CiiA & BS Marshalls
Foundation

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Awarded to **SAFINA SALIM SHAIKH**
of **Vivekanand Education Society's College of Pharmacy** for Presenting an IDEA
for an Innovation Project **Establishing Essential Oil as Functional Excipients for Dermaceuticals: Bringing Herbs into Mainstream Therapy**
at the **CiiA-2 Innovation Exhibition** held on **1st - 3rd February 2023**
at **Nehru Centre, Worli, Mumbai.**




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President, Rotary Club of Bombay Worli
2022-23


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Certificate Of Merit

Awarded to **OJAS MAYURESH GADRE**
of **Vivekanand Education Society's College of Pharmacy** for Presenting an IDEA
for an Innovation Project **Establishing Essential Oil as Functional Excipients for Dermaceuticals: Bringing Herbs into Mainstream Therapy**
at the **CiiA-2 Innovation Exhibition** held on **1st - 3rd February 2023**
at **Nehru Centre, Worli, Mumbai.**




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Awarded to **KRITIKA SHRIVASTAVA**
of **Vivekanand Education Society's College of Pharmacy** for Presenting an IDEA
for an Innovation Project **Transdermal Delivery of Curcumin-Loaded Solid Lipid Nanoparticle as Microneedle Patch for Rheumatoid Arthritis**
at the **CiiA-2 Innovation Exhibition** held on **1st - 3rd February 2023**
at **Nehru Centre, Worli, Mumbai.**



Sachin Singhvi
Rtn. Sachin Singhvi
President, Rotary Club of Bombay Worli
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Awarded to **UMANG RATIKANTA SANKHARI**
of **Vivekanand Education Society's College of Pharmacy** for Presenting an IDEA
for an Innovation Project **PHINACO**
at the **CiiA-2 Innovation Exhibition** held on **1st - 3rd February 2023**
at **Nehru Centre, Worli, Mumbai.**



Sachin Singhvi
Rtn. Sachin Singhvi
President, Rotary Club of Bombay Worli
2022-23

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Awarded to **ROSHNI SUSHIL JAISWAL**
of **Vivekanand Education Society's College of Pharmacy** for Presenting an IDEA
for an Innovation Project **Transdermal Delivery of Curcumin-Loaded Solid Lipid Nanoparticle as Microneedle Patch for Rheumatoid Arthritis**
at the **CiiA-2 Innovation Exhibition** held on **1st - 3rd February 2023**
at **Nehru Centre, Worli, Mumbai.**




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(Zonal Round)

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This is to Certify that **Mr. Choudhary Rohan** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Novel In Situ Bandage for The Treatment of Digital Dermatitis in Cattle in Agriculture and Animal Husbandry** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Academic Year 2022-23

Certificate of Participation

This is to Certify that **Mr. Pawar Yash Prashant** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **गौcare: Herbal Spray for Prevention and Management of LSD in Agriculture and Animal Husbandry** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Dama Anjali** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **गौकारे: Herbal Spray for Prevention and Management of LSD in Agriculture and Animal Husbandry** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Gunjal Vaishanavi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **गौcare: Herbal Spray for Prevention and Management of LSD in Agriculture and Animal Husbandry** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Menon Shreya** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Multiilluminator: A Multimode Parallel Photochemical Reactor in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Bachhav Shantanu** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Multiilluminator: A Multimode Parallel Photochemical Reactor** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Jain Darsh** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Multiilluminator: A Multimode Parallel Photochemical Reactor in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Verma Tanish** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Multiilluminator: A Multimode Parallel Photochemical Reactor in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Mhatre Sejal** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Colorless Curcumin Pastilles: The Healer in Disguise** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Bakre Apurva** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Colorless Curcumin Pastilles: The Healer in Disguise** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Rane Saloni** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Colorless Curcumin Pastilles: The Healer in Disguise** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Ramugade Tanvi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **BIOISOSTERIC REPLACEMENT IN Mtb DprE1 INHIBITOR 'CADD APPROACH'** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Ms. Patil Shefali** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Reversal of Multidrug Resistance in Breast cancer by 4-aminophenazone Schiff bases in Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Ghongade Kavyashree** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Design of Biomolecular complexes in Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Syed Zahed** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **No More Strain to Eyes- Attachable Wi-Fi Camera to Compound Microscope in Engineering and Technology** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Ms. Surana Kajal Vilas** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **No More Strain to Eyes- Attachable Wi-Fi Camera to Compound Microscope** in **Engineering and Technology** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Dumbre Aayushi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **PHINACO - Pharma Industry-Academic Collaboration in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Sankhari Umang** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **PHINACO - Pharma Industry-Academic Collaboration in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Ms. Shinde Akanksha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Chemech: Organic Chemistry made simpler!!!** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Mane Siddhi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Chemech: Organic Chemistry made simpler!!!** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Ms. Indulkar Sanika** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Chemech: Organic Chemistry made simpler!!!** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Sharma Ekta** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Chemech: Organic Chemistry made simpler!!!** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Yewle Pratiksha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Chemech: Organic Chemistry made simpler!!!** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Patil Nikita** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Design, synthesis and biological evaluation of potential analogs of efflux pump inhibitor** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Ms. Bhide Suprita** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **The Word Family in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Mr. Choudhary Ashok** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Design and Evaluation of Microsponge based formulation containing synthetic and herbal extracts** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Patra Riya** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Glaucofen kajal** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Nair Sowparnika** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Pashanbheda floating tablets a boon for urolithiasis treatment** in **Medicine and Pharmacy** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Lad Akanksha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Pashanbheda floating tablets a boon for urolithiasis treatment in Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Sondkar Shweta** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Nirgundi Emulgel for psoriasis treatment - An unexplored herbal remedy in Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Mishra Vedika** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Nirgundi Emulgel for psoriasis treatment - An unexplored herbal remedy in Medicine and Pharmacy Category and PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Thube Tejasvi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Cowrie shells- A new-fangled approach for treatment of Congestive heart failure (CHF)**. in **Medicine and Pharmacy** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Mr. Sankulkar Sahil of Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Cowrie shells- A new-fangled approach for treatment of Congestive heart failure (CHF)**, in **Medicine and Pharmacy** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Nair Anupama** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Cowrie shells- A new-fangled approach for treatment of Congestive heart failure (CHF)**. in **Medicine and Pharmacy** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Patil Sakshi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Garcigel - Under eye Cream for Puffy Eyes** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Mr. Puthran Rishit** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Garcigel - Under eye Cream for Puffy Eyes** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Kudterkar Abhidnya** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Garcigel - Under eye Cream for Puffy Eyes** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Prajapati Sakshi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Garcigel - Under eye Cream for Puffy Eyes** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Kanojiya Shrejal** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Herbal DPI for Asthma** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. George Glory Robert** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Herbal DPI for Asthma** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Khan Nazish** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Herbal DPI for Asthma** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Fernando Selva** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Herbal DPI for Asthma** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Mr. Arumugam Sudharshan** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Development and Characterisation of SMEDDS From Herbal Origin for the Treatment of Jaundice** in **Pure Sciences** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Virkud Swarali** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Development and Characterisation of SMEDDS From Herbal Origin for the Treatment of Jaundice in Pure Sciences Category and UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Tithe Harshad** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Development and Characterisation of SMEDDS From Herbal Origin for the Treatment of Jaundice in Pure Sciences Category and UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Titame Divya of Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Development and Characterisation of SMEDDS From Herbal Origin for the Treatment of Jaundice in Pure Sciences Category and UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Gaikwad Ruchita** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Development and Characterisation of SMEDDS From Herbal Origin for the Treatment of Jaundice in Pure Sciences Category and UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Kolekar Siddhi of Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Ovicare- Nature's hand toward pcos** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Jain Vansh** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Surface modified solid lipid nanoparticles: The novel therapeutic dosage form for Malaria in Medicine and Pharmacy Category** and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Mr. Gupta Shubham** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Surface modified solid lipid nanoparticles: The novel therapeutic dosage form for Malaria in Medicine and Pharmacy** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Sarvaiya Sahil** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Surface modified solid lipid nanoparticles: The novel therapeutic dosage form for Malaria in Medicine and Pharmacy** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Kumari Sneha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **A substitute coating solution against the artificial menace** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Ms. Jagatkar Rutuja** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **A substitute coating solution against the artificial menace** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Thanvi Soundarya** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **A substitute coating solution against the artificial menace** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Shemadkar Pranit** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **A substitute coating solution against the artificial menace** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Kasabi Siddhant** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **A substitute coating solution against the artificial menace** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Soman Akanksha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Cloline: Medicated antifungal panty liner** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Tiwari Upasana** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Cloline: Medicated antifungal panty liner** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Parab Kishori** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Cloline: Medicated antifungal panty liner** in **Medicine and Pharmacy** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Kakade Dhanashri** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Cloline: Medicated antifungal panty liner** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. More Apeksha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Herbal Anti-acne gel- Be natural Be you** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Murarka Devansh** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **CLOT-NOT CLOT: A facile clotting factor detector in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Lasrado Rachel** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **CLOT-NOT CLOT: A facile clotting factor detector in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Saluja Diya** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **CLOT-NOT CLOT: A facile clotting factor detector** in **Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Aralekar Sanjana** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **CLOT-NOT CLOT: A facile clotting factor detector in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Khandave Shruti** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Shathmeth- Herbal stick balm for vaginal infection in Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Jaybhaye Tejshree** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Jelly treats - Herbal formulation for insulin release in Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Mr. Gupta Aman** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Jelly treats - Herbal formulation for insulin release** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Certificate of Participation

This is to Certify that **Mr. Khan Ibrahim** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Jelly treats - Herbal formulation for insulin release** in **Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Jadhav Shubhankar** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Jelly treats - Herbal formulation for insulin release in Medicine and Pharmacy** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Mondkar Tanvi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Ingenious Antimalarial Combination Therapy in Medicine and Pharmacy** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Patil Swapnali** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Ingenious Antimalarial Combination Therapy in Medicine and Pharmacy** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Chandra Komal** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Ready-to-use Iverdrops in Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Sathe Vaishnavi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Ready-to-use Iverdrops in Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Mestry Samiksha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Ready-to-use Iverdrops in Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Mr. Gavhale Akash** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Essential oil Herbal cream: Promising approach for topical route showing Antibacterial activity** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Sawant Neha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Design, synthesis, and biological evaluation of flavone Derivatives serve as a dual inhibitor of Pancreatic Cancer and Diabetes.** in **Pure Sciences** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Rao Shubhang** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Vamanripu- Herbal gummies to combat nausea** in **Medicine and Pharmacy** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Shetkar Chaitrali** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Lipgenin -Treatment of Actinic Cheilitis using Herbal Lip Balm** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Shivankar Namrata** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Lipgenin -Treatment of Actinic Cheilitis using Herbal Lip Balm** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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(Zonal Round)

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Certificate of Participation

This is to Certify that **Ms. Gharat Shruti** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Lipgenin -Treatment of Actinic Cheilitis using Herbal Lip Balm** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Dongre Shrutika** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Lipgenin -Treatment of Actinic Cheilitis using Herbal Lip Balm** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Gaikwad Dhanashree** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Lipgenin -Treatment of Actinic Cheilitis using Herbal Lip Balm** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Mashilkar Nikita** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Vamanripu- Herbal gummies to combat nausea in Medicine and Pharmacy** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Mehta Kushal** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **EVALUATION OF EFFECTS OF BIOFLAVANOIDS ON 3-NITRO PROPIONIC ACID INDUCED HUNTINGTON'S DISEASE IN LABORATORY ANIMALS** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Velar Sangeetha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **EVALUATION OF EFFECTS OF BIOFLAVANOIDS ON 3-NITRO PROPIONIC ACID INDUCED HUNTINGTON'S DISEASE IN LABORATORY ANIMALS** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Vagrecha Niyati** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **EVALUATION OF EFFECTS OF BIOFLAVANOIDS ON 3-NITRO PROPIONIC ACID INDUCED HUNTINGTON'S DISEASE IN LABORATORY ANIMALS** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Jaiswal Roshni** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **EVALUATION OF EFFECTS OF BIOFLAVANOLS ON 3-NITRO PROPIONIC ACID INDUCED HUNTINGTON'S DISEASE IN LABORATORY ANIMALS** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Shrivastava Kritika** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **EVALUATION OF EFFECTS OF BIOFLAVANOIDS ON 3-NITRO PROPIONIC ACID INDUCED HUNTINGTON'S DISEASE IN LABORATORY ANIMALS** in **Pure Sciences** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Bhosale Rutuja** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **E Nitro Generator: An electronic nitrogen extractor in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Patil Chinmaya** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **E Nitro Generator: An electronic nitrogen extractor in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Sawant Anushka** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **E Nitro Generator: An electronic nitrogen extractor in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Prabhu Mohit** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **E Nitro Generator: An electronic nitrogen extractor in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Dalvi Akanksha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Essential oils as functional excipients for dermaticals: Bringing herbals into mainstream therapy** in **Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Namade Mayuri of Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Essential oils as functional excipients for dermaticals: Bringing herbals into mainstream therapy in Medicine and Pharmacy Category and PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Yadav Aastha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **InONE Fluid Bed Processor: One Equipment for Tablet Formulation in Engineering and Technology** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Gupta Prince** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **InONE Fluid Bed Processor: One Equipment for Tablet Formulation in Engineering and Technology** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Khan Afifa** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **InONE Fluid Bed Processor: One Equipment for Tablet Formulation in Engineering and Technology** Category and **UG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Jadhav Omkar** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **InONE Fluid Bed Processor: One Equipment for Tablet Formulation in Engineering and Technology** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Jaiswar Karan** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **InONE Fluid Bed Processor: One Equipment for Tablet Formulation in Engineering and Technology** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Thevar Manigandan** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Woofcare™: A holistic approach for the emotional wellbeing of our pawfect friends in Agriculture and Animal Husbandry** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Mr. Dsouza Myron** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Woofcare™: A holistic approach for the emotional wellbeing of our pawfect friends in Agriculture and Animal Husbandry** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Krishnan Sneha** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Woofcare™: A holistic approach for the emotional wellbeing of our pawfect friends in Agriculture and Animal Husbandry** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Oak Gayatri** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Woofcare™: A holistic approach for the emotional wellbeing of our pawfect friends in Agriculture and Animal Husbandry** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Mr. Fernandes Gerard** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Woofcare™: A holistic approach for the emotional wellbeing of our pawfect friends in Agriculture and Animal Husbandry** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Gidwani Tamanna** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Essential oil Herbal cream: Promising approach for topical route showing Antibacterial activity** in **Pure Sciences** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.


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This is to Certify that **Ms. Raut Ankita** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Novel In Situ Bandage for The Treatment of Digital Dermatitis in Cattle in Agriculture and Animal Husbandry** Category and **PG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Mudaliar Nandini** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **GinMask - Peel off Mask for Anti-Aging** in **Pure Sciences** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Jadhav Shivani** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **GinMask - Peel off Mask for Anti-Aging** in **Pure Sciences** Category and UG Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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This is to Certify that **Ms. Kandalgaonkar Dhanashree** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **GinMask - Peel off Mask for Anti-Aging** in **Pure Sciences** Category and **UG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

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Academic Year 2022-23

Certificate of Participation

This is to Certify that **Ms. Baranwal Priya** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Novel Curcumin Microemulgel containing natural enablers** in **Medicine and Pharmacy** Category and **PG** Level at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

Dr. Minakshi Gurav
OSD,
Aavishkar,
University of Mumbai

Dr. Suhil Patil
Director,
Department of Students' Development,
University of Mumbai



December 24, 2022
Belapur, Navi Mumbai





University of Mumbai

17th **Aavishkar**

Inter-Collegiate/Institute/Department Research Convention

(Zonal Round)

Academic Year 2022-23

Certificate of Participation

This is to Certify that **Mrs. Wani Rashmi** of **Vivekanand Education Society College of Pharmacy, Chembur** has participated and presented a Research Project titled **Comparative binding mode analysis for Synaptic and Extra synaptic GABA receptors in Medicine and Pharmacy Category and PPG Level** at 17th Aavishkar: Inter-Collegiate/Institute/Department Research Convention (Zonal Round) organized by the University of Mumbai at Bharati Vidyapeeth's College of Pharmacy, Belapur, Navi Mumbai on December 24, 2022 for **Pharmacy Colleges/Institutes** zone.

Dr. Minakshi Gurav
OSD,
Aavishkar,
University of Mumbai

Dr. Suhil Patil
Director,
Department of Students' Development,
University of Mumbai



December 24, 2022
Belapur, Navi Mumbai



VIVEKANAND EDUCATION SOCIETY'S COLLEGE OF PHARMACY
Hashu Advani Memorial Complex, Behind Collector Colony
Chembur, Mumbai- 400 074

INDUSTRIAL VISIT REPORT

DATE: 1st October 2022

VENUE: Caius Research Laboratory, St. Xavier's College, Mumbai.

No of students: 22

TIME: 9:30 AM- 5:00 PM

The visit to the Caius Research Laboratory of St. Xavier's College helped us understand the essentials of animal cell culture and tissue culture for the progress of different in-vitro studies to evaluate the biological action of newly developed drugs under investigation, especially drugs for diseases like cancer and HIV, for which animal models alone would not prove sufficient.

The significant learning outcomes from the visit were:

- A deep understanding of the good laboratory practices in the cell culture laboratory where there is absolutely no scope for contamination by external agents.
- Understanding of the design of the cell culture lab and the equipment used there with the functions and importance of each.
- Basic knowledge of maintenance of embryonic chick cell culture.
- Methods to prepare primary and continuous cell cultures for various in vitro studies.

The steps followed in preparation for chick embryo cell culture are:

- 1) Procure a fertilized egg and sterilize it with 70% ethanol in a biosafety cabinet class-
- 2) Crack the egg open using a scalpel and forceps, carefully remove the shell, and peel off the chorionic membrane underneath. (Ensure that the opening is large enough for the embryo to come out)
- 3) Clean the instruments with ethanol and then flame them, allow to cool for a few seconds before bringing in contact with the embryo.
- 4) The embryo is washed with sterilized PBS and then transferred to Dulbecco's Modified Eagle Medium (DMEM) to support the growth of chick embryo cells.
- 5) Cut the tissue into small pieces and incubate at 37°C in a CO₂ incubator for 5 minutes.
- 6) Centrifuge at 3000 rpm for 5 minutes.
- 7) Cells must adhere to the surface of the petri-plate and then the supernatant is discarded using a micropipette.

8) Add 5 ml of PBS and 3 ml of trypsin over the petri-plate to re-suspend the adhered cells in PBS.

9) Then the cells are re-suspended in a culture medium. Passaging is the process by which continuous cell lines are prepared from the primary culture to ensure the longevity of cells and progressive studies on a series of cell lines of the same type. Cells from the primary culture plate need to be passaged once they reach confluency. Components required for passaging are DMEM, PBS, trypsin, and antibiotics.

The number of times passaging is to be done depends on the type of tissue, number of cells and the media used. Cryopreservation of cell lines is performed at temperatures -20, -70 and -186°C. Cell lines can be immortalized by making them cancerous for long-term studies. Cell lines are also used to perform assays like cell viability, cell proliferation, cytotoxicity, and cell migration to test the effectiveness of a drug substance. The visit was extremely beneficial for us as it provided us an opportunity to understand the importance of cell culture studies in drug development and the way it can serve as an alternative to minimize animal usage when used efficiently. It also helped us get exposure to hands-on practice of cell culture techniques.



Timestamp	Email Address	NAME: Sumama Name F Contact number - One or Course/Program Pursuin	Level of Currant Course/I	Institute: Please provide	Place
8/24/2022 15:01:57	anirudh.shelke@svbphar	Shelke Anirudh Ajay	8104239759 B. Pharm	Undergraduate	Saraswathi Vidya Bhavar Dombivli
8/24/2022 15:12:34	pranav.mandlik@svbphar	Mandlik Pranav Bhagwar	9987987120 B. Pharm	Undergraduate	Saraswathi Vidya Bhavar Dombivli
8/24/2022 17:10:22	ninad3009@gmail.com	Lad Ninad Kishor	7039610606 Third Year B Pharm	Undergraduate	Saraswathi Vidya Bhavar Dombivli
8/25/2022 14:33:18	aditya.malsh_e_m_pharmz	Malsh Aditya Diwekar L	88505484398 M. Pharmacy (Quality As	Postgraduate	Oriental College of Pharm Mumbai
8/25/2022 17:32:25	meena.gupta_b.pharma@	GUPTA MEENA KAILAS	9137721266 B pharma (TY)	Undergraduate	Oriental college of pharm Sector-2, behind the san
8/25/2022 19:35:49	kharkarukhadada@svbph	SUKHADA JAYANT KHAR	8879907459 Third Year B.Pharm.	Undergraduate	SVBCP College of Pharm Mumbai
8/25/2022 17:52:10	bipashashrivastav2002@	Shrivastav Rohit	8850719605 BPharmacy	Undergraduate	Dy patil school of pharms Navi mumbai
8/26/2022 20:01:09	ashok.choudharymp2021	Choudhary Ashok Ramk	8875428237 final year M pharm	Postgraduate	Ves college of pharmacy Chembur
8/27/2022 19:10:49	shefali.patilmp2021@ves	Shefali Shokhar Patil	+918291541181 SYMPharm	Postgraduate	VES College Of Pharms Chembur
8/27/2022 19:36:10	kumbhar.suraj98333@gm	Kumbhar Suraj Suresh	9930202579 B pharmacy	Undergraduate	Oriental college of pharm Sector-2, Plot No.3,4,5,
8/27/2022 20:44:59	vedika.mishramp2021@	Mishra Vedika Shiram	9788018394 Mpharm	Postgraduate	Vivekanand Education Ss Chembur
8/27/2022 22:37:50	shindekshitiija97@gmai	Shinde Kshitiija Jeetesh	8104650537 Bpharm	Undergraduate	Saraswathi Vidya Bhavar Dombivli
8/27/2022 23:09:00	jeffreinjeroni.nadarbp202	Nadar Jeffrey Jeroni Joh	9022508331 B.Pharm	Undergraduate	Vivekanand Education Ss College
8/27/2022 23:13:39	jeeya.shalkh_b_pharma@	Shaikh jeeya anjum abdu	7666688799 B pharm second year	Undergraduate	Oriental college of pharm Sanpada
8/27/2022 23:16:40	ruchita.gaikwadtp2021@	Ruchita Rajesh Gaikwad	9321236093 Rangoli	Undergraduate	Ruchita Rajesh Gaikwad Mumbai
8/27/2022 23:17:48	desai.mayurimp2021@v	Desai Mayuri Dattatray	9930100696 M.Pharmacy	Postgraduate	VES COP MUMBAI
8/27/2022 23:36:43	guptakomal0402@gmail	Gupta Komal Ramdhar	9326409178 Bachelor in pharmacy	Undergraduate	Oriental college of pharm Ghatkoper, Mumbai
8/28/2022 0:52:21	devika.yadavbp2021@ve	Yadav Devika Loknath	7496226406 Bachelor of Pharmacy	Undergraduate	Vivekanand Education Ss Chembur
8/28/2022 13:21:16	bhairavve.chimanemp20	Chimane Bhairavve Bar	7045635257 M Pharm Pharmaceutica	Postgraduate	Vivekananda Education (Mumbai

Timestamp	Email Address	NAME: Sumama Name F	Contact number - One or	Course/Program Pursuin	Level of Currant Course/I	Institute: Please provide	Place
8/28/2022 13:30:46	kavyashree.ghongadern	Ghongsade Kavyashree C	9970802570	M. Pharmacy	Postgraduate	Vivekananda Education S	Mumbai
8/28/2022 15:55:23	maitrayee.mayekarbp202	Maitrayee Mayekar	8169223136	B Pharm	Undergraduate	VES College of Pharmac	Mumbai
8/28/2022 17:31:13	abdul.syedmp2021@ves	SYED ABDOUL ZAHIED	+919146857072	M. Pharm	Postgraduate	Vivekanand education sc	Mumbai
8/28/2022 21:50:04	jaya.vammamp2021@ves	Vamsa Jaya Kunjibhani	9967011159	M pharmacy	Postgraduate	Vivekananda education s	Chembur
8/29/2022 9:57:42	shradhdhay2003@gmail.c	Shradhdha Dada Yadav	9892616291	B Pharm	Undergraduate	Indala Institute of Pharm	Bapsai, Kalyan
8/29/2022 9:58:12	yadavsujata9322@gmail	Yadav sujata krishnamoh	9320219509	B pharm	Undergraduate	Indala institute of pharm	Bapsai,kalyan
8/29/2022 10:00:59	chandramore.samrudhi@	Pendit	8452870552	3Y Bpharm	Undergraduate	Indala Institute Of Pharm	Kalyan
8/29/2022 10:02:14	shirke.nidhi@ndala.ac.	Shirke Nidhi Jayant	9567323497	5Y B Pharmacy	Undergraduate	Shirke Nidhi Jayant	Kalyan
8/29/2022 10:05:23	asraak2003@gmail.com	Shaikh Asra mehboob	8090432819	Second year b pharmacy	Undergraduate	Indala Institute of Pharm	Kalyan, bapsai
8/29/2022 10:05:33	joshihrashti611@gmail.c	Joshi Drashti Dilipkumar	8097915540	B pharmacy	Undergraduate	Indala institute of pharm	Kalyan,bapsai

Timestamp	Email Address	Your Full Name	Contact number : One or	Course/Program Pursuin	Level of Current Course/
8/24/2022 22:13:31	payaamvohra@gmail.com	Payaam vohra	8655067959	B Pharmacy	Undergraduate
8/25/2022 19:14:20	walia.khan@hkcp.edu.in	Walia Khan	+919653412210	Brand comparision	Undergraduate
8/26/2022 15:46:29	atif.queshi@hkcp.edu.in	Atif Qureshi	8657292099	S.Y. B.Pharm	Undergraduate
8/26/2022 15:53:16	anuragrane02@gmail.com	Anurag Rane	9167785152	S.Y. B.Pharm	Undergraduate
8/26/2022 17:20:21	virajgholap007@gmail.com	Viraj Gholap	8369337380	B. Pharm	Undergraduate
8/26/2022 17:23:57	virajgholap007@gmail.com	Viraj Gholap	8369337380	B. Pharmacyv	Undergraduate
8/27/2022 12:28:51	tabrez1204@gmail.com	Tabrez Khan	7045439716	B PHARM	Undergraduate
8/27/2022 12:35:20	siddheshchauskar11@gmail.com	Siddesh Dhauskar	8424948886	B PHARM	Undergraduate
8/27/2022 17:02:32	dhirraj.gupta@gmail.com	Dhiraj Gupta	06291498523	B Pharm	Undergraduate
8/27/2022 18:59:49	parab.kishori.bp2020@ves.ac.in	Kishori Parab	8657294927	B pharmacy	Undergraduate
8/27/2022 21:23:36	parihar.kirandeep@ves.ac.in	Kirandeep Parihar	7977108130	B.Pharm	Undergraduate
8/28/2022 11:12:50	asrin.khanmp2021@ves.ac.in	Asnin khan	9326119486	M pharmacy (quality asst)	Postgraduate
8/28/2022 16:52:15	shakshishagun853@gmail.com	Shakshi Singh	9082492476	B Pharmacy	Undergraduate
8/28/2022 17:19:03	darsh.pawalebp2021@ves.ac.in	Darsh Pawale	7738584418	B.PHARM	Undergraduate
8/28/2022 17:58:57	aakansha.shindebp2021@ves.ac.in	Aakansha R. Shinde	8591291675	Bachelor of pharmacy	Undergraduate
8/28/2022 18:07:01	aakansha.shindebp2021@ves.ac.in	Aakansha Rajaram Shinde	8591291675	B.pharmacy	Undergraduate
8/28/2022 18:09:30	priyal.sanghvi12@gmail.com	Priyal Sanghvi	9960147048	Bpharm	Undergraduate
8/28/2022 18:10:05	shrutisanghavi1024@gmail.com	Shruti sanghavi	8850849998	B.Pharmacy	Undergraduate
8/28/2022 19:25:06	manasvi.deshmukhop2021@ves.ac.in	Manasvi Deshmukh	8433638897	B.Pharm	Undergraduate
8/28/2022 20:21:05	pillai.shrutika.bp2020@ves.ac.in	Shrutika Pillai	8451028186	B Pharmacy	Undergraduate
8/29/2022 9:55:22	devansh.murarkabp2021@ves.ac.in	Devansh Murarka	8600881846	B.Pharm	Undergraduate
8/29/2022 10:06:34	devansh.murarkabp2021@ves.ac.in	Devansh Murarka	8600881846	B.pharm	Undergraduate
8/29/2022 16:12:09	gadre.ojas@ves.ac.in	Ojas Mayuresh Gadre	7045682074	B. Pharm	Undergraduate

Timestamp	Email Address	Your Full Name	Full Name of your Institut Place / City of Institute	Are you a member of a R
8/24/2022 22:13:31	payaamvohra@gmail.com	Payaam vohra	Humera khan college of ; Mumbai	NA
8/25/2022 19:14:20	walia.khan@hkcp.edu.in	Walia Khan	H.K.college of pharmacy Mumbai	NA
8/26/2022 15:46:29	atif.queshi@hkcp.edu.in	Atif Qureshi	Humera Khan College of Mumbai	NA
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8/26/2022 17:20:21	virajgholap007@gmail.com	Viraj Gholap	Vivekanand Education Si Chembur, Mumbai	No
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8/27/2022 12:35:20	siddheshchauskar11@gmail.com	Siddesh Dhauskar	DY PATIL UNIVERSITY Pune	NA
8/27/2022 17:02:32	dhirraj.gupta@gmail.com	Dhiraj Gupta	Met institute of pharmacy Mumbai	Na
8/27/2022 18:59:49	parab.kishori.bp2020@ves.ac.in	Kishori Parab	VES College of pharmacy Mumbai	RC VESCOP - GBM
8/27/2022 21:23:36	parihar.kirandeep@ves.ac.in	Kirandeep Parihar	Vivekanand Education Si Chembur	NA
8/28/2022 11:12:50	asrin.khanmp2021@ves.ac.in	Asnin khan	VES college of pharmacy Mumbai	No
8/28/2022 16:52:15	shakshishagun853@gmail.com	Shakshi Singh	D.Y.Patil University Scho Navi Mumbai	NA
8/28/2022 17:19:03	darsh.pawalebp2021@ves.ac.in	Darsh Pawale	VES College of Pharmacy Chembur , Mumbai	NA
8/28/2022 17:58:57	aakansha.shindebp2021@ves.ac.in	Aakansha R. Shinde	Vivekanand college of ph Mumbai	NA
8/28/2022 18:07:01	aakansha.shindebp2021@ves.ac.in	Aakansha Rajaram Shinde	Vivekanand college of ph Mumbai	NA
8/28/2022 18:09:30	priyal.sanghvi12@gmail.com	Priyal Sanghvi	H.K college of pharmacy Mumbai	No
8/28/2022 18:10:05	shrutisanghavi1024@gmail.com	Shruti sanghavi	H K college of pharmacy Mumbai	NA
8/28/2022 19:25:06	manasvi.deshmukhop2021@ves.ac.in	Manasvi Deshmukh	Vivekanand Education Si Chembur (E) - Mumbai	NA
8/28/2022 20:21:05	pillai.shrutika.bp2020@ves.ac.in	Shrutika Pillai	Vivekanand Education Si Mumbai	NA
8/29/2022 9:55:22	devansh.murarkabp2021@ves.ac.in	Devansh Murarka	VES college of pharmacy Mumbai	Yes (RCVESCOP)(BOD)
8/29/2022 10:06:34	devansh.murarkabp2021@ves.ac.in	Devansh Murarka	VES college of pharmacy Mumbai	Yes (RCVESCOP)(BOD)
8/29/2022 16:12:09	gadre.ojas@ves.ac.in	Ojas Mayuresh Gadre	VES College of Pharmacy Chembur, Mumbai	RC VESCOP

VES COLLEGE OF PHARMACY

Hashu Advani Memorial Complex, Behind Collector Colony, Chembur (E), Mumbai - 400 074

Activity Report A.Y 2022-23

INSTITUTION INNOVATION COUNCIL (IIC) COMMITTEE

Details of activity:


Name of the Activity	IGNITION 2022	Activity No.	
Day, Date	30 th August 2022	Department/ Committee/Fac ulty	IIC
Venue	VESCOP	Time	10 am to 5 pm
Nature of activity	Indoor & Outdoor	Total no. of participants	30

Activity Information:

Objectives	To inculcate the idea of entrepreneurship and innovation among the students.
Methodology	Conducting various events (outdoor and indoor) to promote entrepreneurial skills among the students
Outcomes	More students would incline towards innovation and entrepreneurship

PROOFS & DOCUMENTS ATTACHED (Tick mark the proofs attached):

<input checked="" type="checkbox"/> Notice and communication	<input checked="" type="checkbox"/> Feedback form
<input checked="" type="checkbox"/> Student list of participation	<input type="checkbox"/> Feedback analysis
<input checked="" type="checkbox"/> Photos	<input checked="" type="checkbox"/> Media news details
<input type="checkbox"/> Certificate	<input type="checkbox"/> Any other

Name & Signature of Coordinator	Name & Signature of Head/Committee In charge	Name & Signature of IQAC Coordinator
Pratik Bane 		

Since 1962

VES COLLEGE OF PHARMACY

Hashu Advani Memorial Complex, Behind Collector Colony, Chembur (E), Mumbai - 400 074



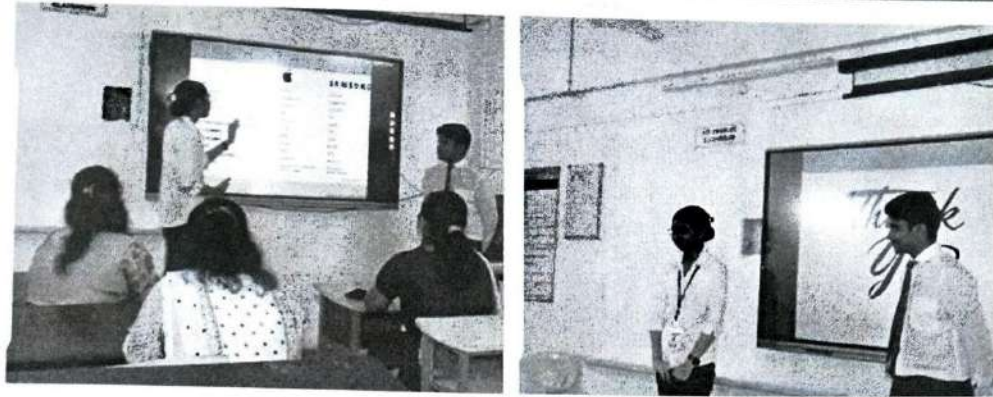
OPENING CEREMONY



INVOPRENEUR

VES COLLEGE OF PHARMACY

Hashu Advani Memorial Complex, Behind Collector Colony, Chembur (E), Mumbai - 400 074



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JACK OF TRADE

Since 1962

VES COLLEGE OF PHARMACY

Hashu Advani Memorial Complex, Behind Collector Colony, Chembur (E), Mumbai - 400 074



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THE INSTITUTION'S INNOVATION COUNCIL
In Association with ROTARACT CLUB OF
Vivekanand Education Society's College of Pharmacy



Presents

IGNITION
2022

**DETAIL AND SALES
COMPETITION**

**ADVERTISE
MAKING &
PERFORMANCE**

**WIN CASH PRIZES
AT ALL EVENTS**

**BUSINESS IDEA
PRESENTATION**

**BRAND
COMPARISON**

**QUIZ
COMPETITION**

All Events To Take Place in OFFLINE Mode

VENUE:

Vivekanand Education Society's College of Pharmacy
 Ashu Advani Memorial Complex, Collector Colony, Chembur (E), Mumbai - 74

NAAC Accredited with A+ Grade till 2027 with CGPA 3.46

Date of the Event: 30 August 2022 (Tuesday)
 UG/PG students from any stream can participate.

Patrons

Shri. B. L. Boolani
 In charge, VESCOP)
 Dr. Jharna Das
 Coordinator, VESCOP)
 Dr. Supriya Shidhaye
 Principal, VESCOP)

Convenor

Dr. Mushtaque Shaikh
 Head & Associate Professor,
 Dept. of Pharm. Chemistry
 Contact: 9326738289
 E-mail: mushtaque.shalkh@ves.ac.in

**Teacher Organizing
Committee**

Mr Pratik Barve
 Mrs Vidhi Bhatia
 Mr Keyur Shastri

For Registration Details, or any enquiry contact Student Organizing Committee:

Shri Bagal-8104229015

Nazish Khan-97020 00418

Sakshi Shiraskar-95453 23153

VES College of Pharmacy, Mumbai
Hashu Advani Memorial Complex, Collector Colony, Chembur, Mumbai - 400 074

A Report on
Industry Visit at Icon Labs, Sanpada, Navi Mumbai
on 3rd December, 2022

Industry visit at Icon labs at Sanpada is an initiative taken by VESOP where I gained valuable insights into Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM) instruments. This report aims to provide a comprehensive overview of my observations and learnings during the visit.

Icon Labs, located in Sanpada, is a leading provider of cutting-edge laboratory equipment, specializing in electron microscopy solutions. The company is renowned for its innovative technologies and contributions to scientific research. During the visit, we had the privilege of exploring the TEM facility at Icon Labs. The TEM instrument showcased exceptional capabilities in high-resolution imaging and analysis of nanoscale structures. The instrument's advanced imaging capabilities allowed for detailed examination of samples at the atomic level, providing crucial insights for various scientific disciplines.

The SEM facility at Icon Labs proved equally impressive, offering unique features for surface imaging and analysis. The instrument excelled in providing three-dimensional images of samples, allowing for a more comprehensive understanding of surface structures. Both TEM and SEM instruments at Icon Labs find applications across diverse scientific fields, including materials science, biology, and nanotechnology.

Researchers and scientists can utilize these instruments to study and analyze various samples, contributing to advancements in their respective domains. The industry visit to Icon Labs in Sanpada provided an enriching experience, offering a glimpse into the world of Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM).