

PSG COLLEGE OF PHARMACY

7.3.1 Portray the performance of the institution in one area distinctive to its priority and thrust within 1000 words

List of summer fellowship program attended by students

Name of the student	Date of visit	Duration of visit	Lab visit	Guide
Eldose Jose Janani P	09.12.2017 – 29.12.2019	21 days	SRISTI in collaboration with BIRAC	Mr. Karthikeyan S
Balaji N	Sep – Nov 2017	56 days	RMRIMS, Patna, Bihar	Dr. Ganesh Chandra Sahoo
Ms Fashila Banu A	2017	2 months	IISER, Bhopal	Dr. Nishra Ramkumar
Ms D Haritha	05.02.2018 - 26.02.2018	20 days	Biotechnology Innovation and Ignition Scheme (BIIS), Ahmedabad	
Arvinth Kumar.S	14.05.2018 - 10.05.2018	56 days	Institute of Genomics and Integrative Biology (IGIB), New Delhi	Dr. Sivaprakash Ramalingam
K.Bharathi	15.09.2019 – 15.11.2019	2 months	Translational Health Science and Technology Institute, Gurgaon	Dr.Shinjini Bhatnagar
ArunPrasath D	25.09.2019- 23.11.2019	2 months	Jawaharlal Nehru Centre for Advanced Science and Research, Bengaluru	Prof. Maneesha Shreedhar Inamdar
Karthikeyan	19.09.2019 – 15.11.2019	2 months	University of Delhi-South campus	Prof. Alo Nag
Karthick Kannan.R	16.09.2019 – 12.11.2019	2 months	LV Prasad, eye institute, center for ocular regeneration	Dr.Indumathi Mariappan
M.Bhagyashree	18.12.2020 - 16.02.2021	2 months	Banaras Hindu university, Varanasi, UP	Prof.Surendrakumar Trigun
Vimalraj M	Jan - Feb 2021	2 months	National Institute of Pathology, New Delhi	Dr. Rajudagadi

Handwritten signature



REVIEW ARTICLE

- Regulatory Aspects Pertaining To Herbal Drugs, Dietary and Herbal Supplements In India: Concern For Safety** 01

K. Hindu, K. Mangathayaru*

RESEARCH ARTICLE

- Comparative Study on Efficacy and Cost Effectiveness of Equivalent Doses of HMG COA Reductase Inhibitors** 05

K.S.G.Arulkumaran, Prudence.A.Rodrigues*, P.Rama, Justin.A

- Formulation and Evaluation of Aceclofenac Fast Dissolving Tablets Using Crospovidone and Crosscarmellose Sodium as Superdisintegrants** 11

M.Rajesh*, K.Akila, Arun Aravind, P.Arya Lekshmi, N.Balaji, A.Lakshmi Narayanan and P.Solairaj

- Physicochemical Evaluation for leaves of Bauhinia tomentosa & Milliettia pinnata** 18

Kurachaveti Megha shyam, V. Shankar ananth*, D. Ranganayakulu , K.K.Rajasekhar

- A Retrospective Study on Sepsis and its Management From The Clinical Pharmacy Perspective in a Tertiary Care Hospital** 23

U.AravindKrishnan, RonyMathew, Ivy Jesse, Siby Joseph*, Shyam Sundar. P

- Instructions to Authors** 30



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"To establish a 'Center of Excellence' for Pharma Education & Research."



Our Vision

"To impart theoretical and practical knowledge in Pharma Sciences so that those who come out from Institution will have an exact mind set up for rational thinking and scientific innovations."

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	◆ Pharmaceutical Analysis	-	18
	◆ Pharmacology	-	18
	◆ Pharmacy Practice	-	18
3.	Pharm.D	-	30
4.	Pharm.D (Post Baccalaureate)	-	10



PSG NEWS DIGEST

A news letter from PSG College of Pharmacy, Department of Pharmacy Practice,

Pulse of the Issue Pharmacist's Desk Drugs Approved News Room Department Activities

FROM THE PHARMACIST'S DESK



ACRODERMATITIS ENTEROPATHICA

Acrodermatitis enteropathica (AE) is a rare inherited form of zinc deficiency, characterized by a triad of periorificial and acral dermatitis, alopecia, and diarrhea. It is the result of mutations in the SLC39A4 gene on chromosome 8q24.3. The SLC39A4 gene encodes a transmembrane protein that is part of the zinc/iron-regulated transporter-like protein (ZIP) family required for zinc uptake.

Zinc deficiency is an important problem in children and adolescents, particularly in resource-limited countries. AE usually manifests in infancy within days in cases of bottle-fed infants and days to weeks after weaning in breastfed infants.

The affected infants develop an erythematous and vesiculobullous dermatitis, alopecia, ophthalmic disorders, diarrhea, severe growth retardation, delayed sexual maturation, neuropsychiatric manifestations, and frequent infections.

Zinc is an essential trace nutrient required for the proper function of more than 100 enzymes including carbonic anhydrase, the alkaline phosphatases, dehydrogenases, and carboxypeptidases. It is involved in the regulation of nucleoproteins and the activity of various inflammatory cells and plays a role in growth, tissue repair and wound healing, carbohydrate tolerance, and synthesis of testicular hormones.

Zinc is involved in the immune response. Zinc deficiency is associated with impaired phagocytic function, lymphocyte depletion, decreased immunoglobulin production, a reduction in the T4+/T8+ ratio, and decreased interleukin (IL)-2 production.

Treatment of acrodermatitis enteropathica requires lifelong oral zinc supplementation with pharmacologic doses of zinc. Among different zinc salt forms that are available in the market (zinc acetate, zinc gluconate, zinc sulfate, zinc citrate, zinc oxide), both zinc citrate and gluconate salts are effective in the prevention of zinc deficiency and also in the treatment of diarrhea. Studies suggest that the absorption of zinc oxide is less when compared to other zinc compounds when given without food, and may be minimally absorbed by some individuals. Zinc acetate has been in use as an off-label drug in India for the treatment of AE.

Replacement doses of 3 mg/kg/day of elemental zinc (13.2 mg/kg/day of zinc sulfate) are recommended. Zinc levels are measured every three to six months and the dose is adjusted up or down as needed.

The parents or the care takers need to be counseled about the zinc deficiency and the importance of zinc supplementation to have a better quality of life.

References:

- 1) https://www.uptodate.com/contents/zinc-deficiency-and-supplementation-in-children-and-adolescents?search=Acrodermatitis%20enteropathica§ionRank=1&usage_type=default&anchor=H8&source=machineLearning&selectedTitle=1~20&display_rank=1#H8
- 2) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3901420/>
- 3) <https://emedicine.medscape.com/article/1102575-overview>

FDA APPROVED DRUGS FROM JANUARY TO JUNE 2019

S.NO	DRUG NAME	ACTIVE INGREDIENT	FDA APPROVED USE
1	Vyndaqel Vyndamax	Tafamidis meglumine Tafamidis	Treatment of the cardiomyopathy of wild type or hereditary transthyretin-mediated amyloidosis (ATTR-CM) in adults.
2	Zolgensma	Onasemnogene abeparvovec-xioi	Pediatrics <2 years of age with spinal muscular atrophy with bi-allelic mutations in the SMN1 gene.
3	Duobrii	Halobetasol propionate and tazarotene	For the treatment of plaque psoriasis .
4	Tosymra nasal spray	Sumatriptan	For the treatment of acute migraine in adults.
5	Cablivi	Caplacizumab-yhdp	For the treatment of acquired thrombotic thrombocytopenic purpura.
6	Egaten	Triclabendazole	For the treatment of fascioliasis (liver fluke infestation).
7	Dengvaxia	Dengue Tetravalent Vaccine, Live	For the prevention of dengue disease.
8	Jakafi	Ruxolitinib	For the treatment of steroid-refractory acute graft-versus-host disease in adults and pediatrics >12 years.
9	Nayzilam	Midazolam	For the treatment of intermittent, stereotypic episodes of frequent seizure activity.
10	Ruzurgi	Amifampridine	For the treatment of Lambert-Eaton myasthenic syndrome in pediatrics.

11	Zulresso	Brexanolone	For the treatment of postpartum depression.
12	Jatenzo	Testosterone undecanoate	For the treatment of male conditions associated with a deficiency or absence of endogenous testosterone.
13	Cimzia	Certolizumab pegol	For the treatment of non-radiographic axial spondyloarthritis.
14	Sunosi	Solriamfetol	For the treatment of excessive daytime sleepiness due to narcolepsy or obstructive sleep apnea.

Ref - <https://www.centerwatch.com/drug-information/fda-approved-drugs/>

V.Amrutha Varshini, Vth-Pharm D

NEWS ROOM

CHALLENGES IN MONOCLONAL ANTIBODIES TRIAL

Monoclonal antibodies are used as treatment options particularly in oncology and immunology. In 2006 FIH trial, all subjects who received first dose of active drug TGN1412, a superagonist mAb against CD25, developed life threatening adverse reaction, due to uncontrollable cytokine release. The maximum recommended starting dose (MRSD) was determined from no-observed adverse effect level (NOAEL) (0.1mg/kg). When re-examining the dose, it was found that 0.1mg/kg would elicit greater than 90% receptor occupancy. Apart from the high PD effect, the increased receptor occupancy could have altered the PK, producing the cytokine storm. From the incident, it is understood that once receptor occupancy starts to increase, PK and PD response to further dose escalations become non-linear. As per revised EMA guidelines, FIH doses need to be calculated from both NOAEL and MABEL to reduce the risks of trial subjects being dosed with novel mAb for first time. Another challenge is determining the optimal route of administration as site reactions are common and can lead to termination of trials. Any prophylactic therapy may avoid reactions but may influence the further development of compound leading to termination of trials. Hence, it is recommended to observe the patients during the first few hours after the injection of new mAb. Another factor is the possible delayed PD effect related to duration of target inhibition or target mediated PF profile. Long follow-up of subjects should be foreseen to monitor possible delayed adverse reactions. Thus, while running mAb clinical trials, numerous PK & PD factors are to be considered.

References:

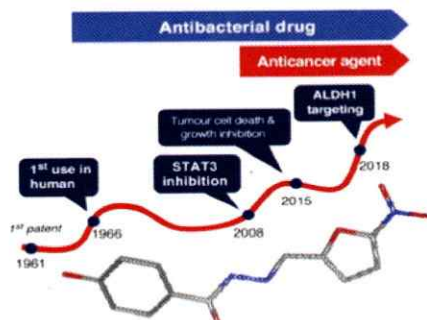
Narine Baririan, Pharm. D, 2018. Monoclonal Antibodies: Clinical Pharmacology Knowledge in Support of FIH and Early Development. Applied Clinical Trials. Available at :
<http://www.appliedclinicaltrialsonline.com/monoclonal-antibodies-clinical-pharmacology-knowledge-support-fih-and-early-development>

Suriya Dharsini, Vth Pharm D

BUDGE OF AN ANTIBACTERIAL TO AN ANTICANCEROUS DRUG

Nifuroxazide (NFX) is a broad-spectrum nitrofurantoin antibiotic used to treat gastrointestinal bacterial infections and associated diarrhoea for >50 years. In 2008, the discovery of potent inhibition of the transcription factor, signal transducer and activator of transcription STAT3 by NFX, provoked studies as a potential anticancer agent. Complementary biochemical studies revealed that NFX inhibits STAT3 phosphorylation through inhibition of the JAK family kinases JAK2 and Tyk2.

This kinase inhibitory activity accounts for the antiproliferative activity of NFX in myeloma cells with a constitutive activation of STAT3, with minimal effects on normal cells. Subsequently, in 2015, it was shown that NFX induces cancer cell apoptosis and inhibits tumour growth. Recently in 2018, NFX was identified as a potent inhibitor of aldehyde dehydrogenase (ALDH)1 that selectively kills ALDH high cancer-initiating cells. The 5-nitrofurans require bioactivation to exert their anticancer activity. NFX can be bioactivated by aldehyde dehydrogenase (ALDH) enzymes which are highly expressed in certain cancer-initiating cells (ALDH1 high stem cells). In sharp contrast, ALDH low cells were found to be resistant to NFX. This key discovery opens the door to the design of new melanoma treatment protocols with patient stratification based on the unique ALDH1 high-dependent activity of NFX. These two landmark discoveries – STAT3 and ALDH1 inhibition – strongly support the potential shift of NFX as a targeted anticancer agent.



References:

- <https://www.sciencedirect.com/science/article/pii/S1359644619301485>
- <https://www.nature.com/articles/cddis201563>
- <http://www.bloodjournal.org/content/108/11/3450?sso-checked=true>
- <https://www.sciencedirect.com/science/article/pii/S2451945618303003>

Shuruthi Sankar, Pharm D, Vth Year,.

DEPARTMENT ACTIVITY

Community Services:

PSG College of Pharmacy, Department of Pharmacy Practice conducted World pharmacist day observed on September 25th at PSGIMS&R which highlights safe and effective medicines for all. Nearly 160 Public population attended and were benefited through this programme.



As a Part of social responsibility PSG College of Pharmacy, Department of Pharmacy Practice have conducted Dengue awareness programme at Coimbatore corporation School, Ramanathapuram, Coimbatore on 9th November 2019.

STUDENT'S ACHIEVEMENTS

- Saranya N., Pharm D Intern won the second place- for Oral presentation on Challenges and opportunities for Clinical Pharmacist- ICCO PHARMA held at Dayanand Sagar University, Bengaluru.
- Artificial Intelligence Workshop: Three of the interns, Joseph Noel Jacob, Dharani.A and Janani.P were selected for national level competition after a one week training programme organised by IIT at PSG College of Pharmacy.
- Sruthi K. Pharm D V year received First place in e-poster presentation held at the one day national level seminar on September 3rd 2019 "Current scenario of Patient safety Vigilance activities in India" conducted by KMCH College of Pharmacy for poster titled - Trigger tool based detection of ADE associated with high alert medication use under the guidance of Dr.G.Andhuvan.
- Total number of publications from the Department of Pharmacy Practice between the months of April to December 2019: 08



Contact:

Principal
PSG College for Pharmacy, Peelamedu,
Coimbatore-04, Tamilnadu.
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PHARMAPEDIA

PSGCP E-News Letter

VOL 5 | ISSUE 13 | JUN-SEP 2020

First single inhaler triple therapy approved for asthma and COPD by USFDA



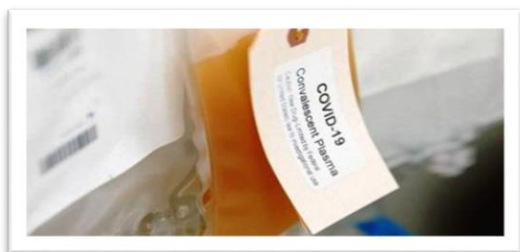
GlaxoSmithKline plc (GSK) and Innoviva, Inc. announced the United States Food and Drug Administration (USFDA) has approved a new indication for Trelegy Ellipta (fluticasone furoate/umeclidinium/vilanterol) for the treatment of asthma in patients aged 18 years and older adding to its current license for use in patients with chronic obstructive pulmonary disease (COPD).

The FDA-approved strength for both COPD and asthma is fluticasone furoate/umeclidinium/vilanterol 100/62.5/25mcg. The approval means Trelegy is the first single inhaler triple therapy approved for the maintenance treatment of both asthma and COPD and is the only single inhaler triple therapy available for patients in a convenient once-daily inhalation in the US.

Ref: <http://www.pharmabiz.com/NewsDetails.aspx?aid=131018&sid=2>

Plasma therapy doesn't reduce covid-19 death risk, says ICMR

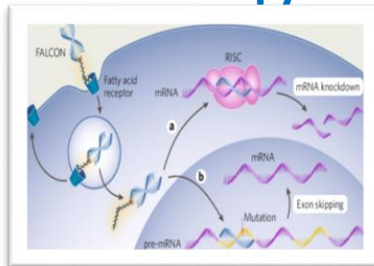
The Indian Council of Medical Research (ICMR) in a study, said plasma therapy for COVID-19 neither reduces the death risk nor does it slow down the progression of the disease from mild to severe stage. In plasma therapy, antibodies from the blood of a person who has recovered from corona virus are taken and transfused into a corona virus infected patient to boost the immune system to fight the infection.



A trial by ICMR was conducted on 464 moderately-ill patients with breathing difficulties and oxygen saturation level of less than 93 per cent. They were divided into two groups -- 235 were given plasma while 229 received only standard care. Both intervention and control groups were compared after 28 days. A total of 34 patients or 13.6 per cent of those who received plasma therapy could not recover and died, the top medical body said, while 31 patients or 14.6 per cent of those who did not receive plasma died. The study said 17 patients in each group progressed to have severe disease. Plasma therapy, however, had minor benefits in reducing symptoms like shortness of breath and fatigue and it had no effect on fever and cough.

Ref: <https://www.ndtv.com/india-news/convalescent-plasma-therapy-didnt-help-reduce-covid-19-deaths-top-medical-body-icmr-study-2292543>

Next-Generation Novel RNA Based Therapeutics for Gene Therapy



DTx Pharma, has developed a proprietary technology platform to enable the delivery of novel RNA-based therapeutics to a wide range of tissues and cell types throughout the body. Using this platform, dubbed FALCON (Fatty Acid Ligand Conjugated Oligonucleotide).

Short interfering RNA (siRNA) or AntiSense Oligonucleotide (ASO) has been limited by poor bio distribution and rapid clearance. But this DTx's long chain fatty acids are highly soluble in aqueous solutions, improving bio distribution and allow for targeted and efficient uptake of siRNA and ASO by many different cell types and tissues *in vivo* hence avoiding toxicities associated with nanoparticle delivery.

Ref: <https://www.nature.com/articles/d43747-020-01099-9>

Nano formulation of Dexamethasone is the first drug to show life-saving efficacy in COVID-19

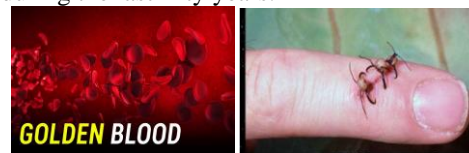
In the world's largest randomized controlled Covid-19 trial called RECOVERY trial revealed that dexamethasone (6mg/day Oral or IV for 10 days) reduces the number of COVID-19-related deaths by 35% in patients on the intensive care unit (ICU). Nanomedicine dexamethasone formulation able to control cytokine proliferation, and has highly potent anti-fibrotic, anti-swelling properties helps Covid-19 patient to recover faster than treatment with the free drug.

Ref: <https://www.nature.com/articles/s41565-020-0752-z>

1. The device which determines the porosity of solid drug substance.
2. Sorbitan Ester of fatty acid are called as _____
3. Availability of EUDRAGIT[®] RL 100.
4. Composition of Zinc silicate and Barium borosilicate.
5. Dosage form that process by Candy Moulding.
6. Co processed excipient of Captisol.
7. Flavour, which added to mask saltiness.
8. A polymer used for food and pharmaceutical packages regulated by FDA.
9. Anti caking agent used to absorb excess moisture and make them water repellent.
10. The lacquers which prevent Tin from erosion.
11. Device used to sort out filled capsule.
12. Agent used in Vulcanizing in Rubber.
13. Physical parameter in instability of emulsion.
14. Excess spraying of coating solution or Over heating leads to _____
15. Synthetic Colour additives used in cosmetics.

PHARMA FACTS

1. The Rarest blood type in existence is Rh-null blood called GOLDEN BLOOD. This blood type has only been found in 43 persons around the world during the last fifty years.



2. Army Ants are used as "Natural Sutures" to stitch up wounds in East Africa. This particular breed of ants is called the Dorylus. The ants jaws are so powerful the natives use them to stable Wounds together by forcing them to bite them and then break off their body.

3. The Lacrima Punctum is a small hole in your eyelids that drains your tears to your nose. It's the reason why you get a runny nose after crying.

The Beautiful Old

Bone syringe (made up of bird/animal bone) used to introduce chemicals per urethra for the treatment of syphilis in 18th century.



WORD PUZZLE

G	N	I	R	E	T	S	I	L	B	C
O	N	I	T	R	I	L	E	A	S	Y
P	S	P	A	N	S	Y	F	H	R	C
Y	S	W	S	E	G	N	E	Z	O	L
C	A	F	K	T	R	C	L	A	T	O
N	L	H	J	U	A	G	C	J	O	D
O	G	R	V	I	N	Y	L	K	S	E
M	A	P	L	E	U	R	S	S	O	X
E	N	Y	S	U	L	P	H	U	R	T
T	E	F	L	J	E	G	H	E	T	R
E	J	S	H	R	S	M	I	C	A	I
R	V	I	S	C	O	C	I	T	Y	N

ANSWER FOR THE PREVIOUS E-NEWSLETTER PUZZLE

1. TOPICAL 2.WAXED 3.PULSATIVE 4.CDSO 5.SHORTER 6.SORPMETER 7.EMULSION
8.MICRODOSE 9.MACERATION 10.PULMONARY 11.FETUS
12.SALIVA 13.METASTABLE 14.MACROGOL 15.PLACEBO

Send your correct answers to psgcp.ceutics@gmail.com.

The first three participants with correct answers will be acknowledged in the next issue

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Refrigerators and freezers



Conventional PCR



Homogenizer



Dissolution apparatus



Tablet punching machine



Autoclave



High Performance Liquid Chromatography - Shimadzu



A photograph of a laboratory setup for HPLC-UV analysis. The equipment, including two HPLC pumps, a detector, and a computer system, is placed on a blue desk. A sign on the wall reads "HPLC - UV VISIBLE BOARD".

Mechanical stirrer, Hot Air Oven, Centrifuge



Lyophilizer



Multipurpose equipment and Friabilator



High Performance Thin Layer Chromatography

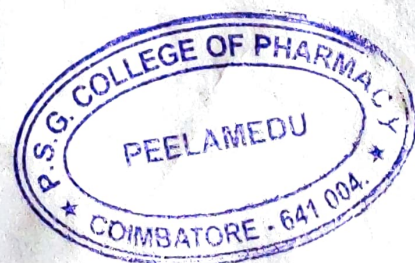


Ultra-Performance Liquid Chromatography



EQUIPMENT DETAILS ABOVE 1,00,000

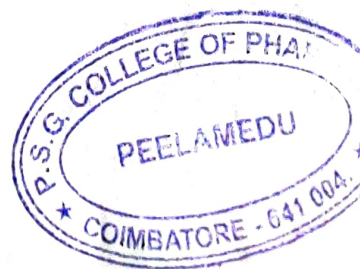
S.N O	CATEGORY NAME	EQUIPMENT NAME	DEPARTMENT	PURCH DATE	INSTAL DATE	QTY	SERIAL NO	RATE
1	ROTA ROD	ORCHID ROTA ROD APPARATUS	M.PHARM PHARMACOLOGY	12-NOV-19	11-JAN-20	1	RR01-19-20/14	1,01,920.00
2	FLOW CYTOMETER	DxFLEX 2 LASER 6 COLOR FLOWCYTOMETER	MOLECULAR PHARMACOLOGY	22-JAN-19	04-JUL-19	1	BB49118	26,25,000.00
3	COLUMN OVEN	COLUMN OVEN SHIMADZU CTO-10	PHARMA ANALYSIS LAB	19-DEC-18	28-FEB-19	1	C20145613586	2,20,500.00
4	DIFFERENTIAL SCANNING CALORIMETER	METTLER DIFFERENTIAL SCANNING CALORIMETER	PHARMACEUTICS LAB	19-DEC-18	28-MAY-19	1	B904145835	25,80,882.00
5	HOMOGENEIZER	HOMOGENIZER OMNI GLH 850	CENTER FOR DRUG DELIVERY SYSTEM	19-DEC-18	05-MAR-19	1	GL42201	3,07,338.00
6	BIOLOGICAL SAFETY CABINET	THERMO CLASS II BIOSAFETY CABINET 6 FEET	MOLECULAR PHARMACOLOGY	23-NOV-18	05-JUL-19	1	1389M31808250 8	4,21,397.25
7	FREEZER	-86 C THERMO ULT FREEZER 902	MOLECULAR PHARMACOLOGY	23-NOV-18	12-SEP-19	1	ULTS003681914 15	3,68,217.58
8	INCUBATOR	THERMO STERI CYCLE 1160 CO2 INCUBATOR WITH O2 CONTROL	MOLECULAR PHARMACOLOGY	23-NOV-18	24-JUL-19	1	42419533	4,60,258.29
9	INCUBATOR/SHAKER	THERMO MAX Q 4450 REFRIGERATED INCUBATOR/SHAKER	MOLECULAR PHARMACOLOGY	23-NOV-18	24-JUL-19	1	300261128	3,44,958.43
10	REFRIGERATED CENTRIFUGE	THERMO ULTRA CENTRIFUGE	MOLECULAR PHARMACOLOGY	23-NOV-18	22-NOV-19	1	42262112	37,10,654.00
11	REFRIGERATED CENTRIFUGE	THERMO ST8R REFRIGERATED CENTRIFUGE	MOLECULAR PHARMACOLOGY	23-NOV-18	05-JUL-19	1	42412520	2,91,359.76
12	SPECTRO PHOTOMETER	SPECTRAMAX MICRO-VOLUME SPECTRO PHOTOMETER	MOLECULAR PHARMACOLOGY	07-DEC-17	04-JAN-18	1	810251	5,57,108.00
13	ELECTRONIC BALANCE	MOISTURE ANALYZER ATS60	CENTER FOR DRUG DELIVERY SYSTEM	30-MAR-17	10-APR-17	1	D209407445	1,14,975.00
14	HPLC SYSTEM	SHIMADZU PHOTODIODE ARRAY DETECTOR(SEMI PREPERATIVE HPLC)	PHARMA ANALYSIS LAB	29-MAR-17	26-OCT-17	1	L20155417817C D	17,04,083.00
15	MICROSCOPE	NIKON TRINOCULAR FLUORESCENCE MICROSCOPE	MOLECULAR PHARMACOLOGY	29-MAR-17	14-NOV-17	1	710009	9,52,787.00
16	MICROSCOPE	LABOMED TRINOCULAR MICROSCOPE LX 400	PHARMOCOGNOSY	26-NOV-16	04-APR-17	1	170296657	1,10,750.00
17	MICROSCOPE	LABOMED TRINOCULAR MICROSCOPE LX 400	LIFE SCIENCES LAB	26-NOV-16	04-APR-17	1	170296661	1,10,750.00
18	AUTO CLAVE	EQUITRON AUTOCLAVE 7441SLEFA	LIFE SCIENCES LAB	09-JUN-16	29-JUN-16	1	7441SLEFA.AFF .121	1,36,500.00



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S.N O	CATEGORY NAME	EQUIPMENT NAME	DEPARTMENT	PURCH DATE	INSTAL DATE	QTY	SERIAL NO	RATE
19	ROTARY VACUUM FLASH EVAPORATOR	SUPERFIT ROTARY VACUUM FLASH EVAPORATOR PBV	PHARMOCOGNOSY	16-MAR-15	25-AUG-15	1	899	1,21,380.00
20	ROTARY VACUUM FLASH EVAPORATOR	SUPERFIT ROTARY VACUUM FLASH EVAPORATOR PBV	PHARMOCOGNOSY	16-MAR-15	18-JUN-15	1	900	1,21,380.00
21	ROTARY VACUUM FLASH EVAPORATOR	SUPERFIT ROTARY VACUUM FLASH EVAPORATOR PBV	PHARMACEUTICAL CHEMISTRY LAB I	16-MAR-15	18-JUN-15	1	901	1,21,380.00
22	ALL PURPOSE EQUIPMENT	ALL PURPOSE EQUIPMENT INWEKA	PHARMACEUTICS PGLAB	19-APR-14	13-MAR-15	1	401148.0814	1,50,000.00
23	DISSOLUTION RATE TEST APPARATUS	LABINDIA DISSOLUTION RATE TEST APPARATUS	THERAPUTIC DRUG MONITORING LAB	19-APR-14	01-OCT-14	1	14490819	1,60,000.00
24	DISSOLUTION RATE TEST APPARATUS	LABINDIA DISSOLUTION RATE TEST APPARATUS	PHARMACEUTICS LAB	19-APR-14	01-OCT-14	1	14490820	1,60,000.00
25	ROTARY TABLET PRESS	ROTARY TABLET PRESS	PHARMACEUTICS PGLAB	19-APR-14	14-MAR-15	1	500805.0814	3,80,000.00
26	GRIP STRENGTH METER	GRIP STRENGTH METER	M.PHARM PHARMACOLOGY	15-MAR-14	23-JUL-14	1	31003116	5,73,128.00
27	TEXTURE ANALYSER	TEXT PLUS TEXTURE ANALYSER	CENTER FOR DRUG DELIVERY SYSTEM	21-JAN-14	11-SEP-14	1	41324	18,75,600.00
28	FREEZER	THERMO -40 DEG FREEZER	MOLECULAR PHARMACOLOGY	30-MAR-13	27-SEP-13	1	27620130000115	1,73,025.00
29	HOMOGENEIZER	STANSED PRESSURE CELL HOMOGENISER	CENTER FOR DRUG DELIVERY SYSTEM	30-MAR-13	12-MAR-14	1	9973	12,39,990.00
30	TURBOVAB LV CONCENTRATION WORK STATION	BIOTAGE TURBOVAB LV CONCENTRATION WORK STATION	THERAPUTIC DRUG MONITORING LAB	29-MAR-13	06-AUG-13	1	TV1319N17775	8,17,032.00
31	ELECTRONIC BALANCE	SARTORIOUS ELECTRONIC BALANCE	THERAPUTIC DRUG MONITORING LAB	11-MAR-13	24-MAY-13	1	27791475	1,14,500.00
32	FULL FIELD LASER PERFUSION IMAGER	MOOR FULL FIELD LASER PERFUSION IMAGER	M.PHARM PHARMACOLOGY	11-MAR-13	13-AUG-13	1	0019	24,24,110.00
33	ICE FLAKER	ICE FLACKING MACHINE SCOTSMAN	MOLECULAR PHARMACOLOGY	11-MAR-13	03-JUN-13	1	DD937212P	2,10,000.00
34	ULTRASONIC BATH	ULTRASONIC CLEANER 6LTS	THERAPUTIC DRUG MONITORING LAB	11-MAR-13	03-JUN-13	1	2013011170	1,10,000.00
35	BIOLOGICAL SAFETY CABINET	YESCO CLASS II TYPE A2 BIOLOGICAL SAFETY CABINET	MOLECULAR PHARMACOLOGY	18-DEC-12	17-APR-13	1	2013-76787	2,73,600.00
36	STEREOTACTIC DEVICE	STEREOSTATIC SGL 45 DEGREE	M.PHARM PHARMACOLOGY	31-AUG-12		1	RWD1208310993 M	5,10,000.00

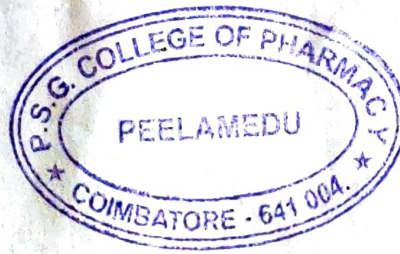
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S.N O	CATEGORY NAME	EQUIPMENT NAME	DEPARTMENT	PURCH DATE	INSTAL DATE	QTY	SERIAL NO	RATE
37	PCR	PCR SYSTEM RT 96 WELL	MOLECULAR PHARMACOLOGY	30-AUG-12	22-OCT-12	1	272006308	13,49,743.00
38	ELECTRO PHOROSIS	ISOLATED POWER PACK	MOLECULAR PHARMACOLOGY	17-APR-12	06-JUN-12	1	111102153	1,61,908.00
39	MICROSCOPE	NIKON INVERTED FLUORESCENCE MICROSCOPE	MOLECULAR PHARMACOLOGY	26-NOV-11	28-MAR-12	1	605237	9,19,000.00
40	HPLC SYSTEM	WATERS ACQUITY H CLASS HPLC SYSTEM	THERAPUTIC DRUG MONITORING LAB	24-OCT-11	28-JUN-12	1	W1SAU6001M	34,55,265.00
41	SPECTRO PHOTOMETER	SMARTSPEC PLUS SPECTROPHOTOMETER	THERAPUTIC DRUG MONITORING LAB	22-OCT-11	30-NOV-12	1	273BRO6624	3,84,000.00
42	ZETASIZER	ZETASIZER	CENTER FOR DRUG DELIVERY SYSTEM	22-OCT-11	20-JAN-12	1	MAL1063652	21,44,534.00
43	GEL DOCUMENTATION SYSTEM	CHEMI-LUMINESCENCE GEL DOC SYSTEM	MOLECULAR PHARMACOLOGY	20-JUL-11	16-OCT-11	1	DR4V2/2241	9,95,810.00
44	LAMINAR AIR FLOW	AIRSYS LAMINAR AIR FLOW	MOLECULAR PHARMACOLOGY	20-JUL-11	09-SEP-11	1	AIR-2	1,09,524.00
45	MIXER	THERMO MIXER COMFORT	MOLECULAR PHARMACOLOGY	20-JUL-11	17-NOV-11	1	5355AM353176	1,80,123.00
46	SEMI DRY PLOTTING UNIT	SEMI DRY PLOTTING UNIT	MOLECULAR PHARMACOLOGY	20-JUL-11	09-SEP-11	1	30023853	1,19,048.00
47	VOLTOHM METER	VOLTOHM METER EVOM2	MOLECULAR PHARMACOLOGY	20-JUL-11	10-MAY-12	1	145149AA10B	1,71,631.19
48	HPLC SYSTEM	WATERS BINARY GRADIENT HPLC SYSTEM	THERAPUTIC DRUG MONITORING LAB	27-JUL-10	03-FEB-11	1	HPLC-W1	21,86,264.00
49	FREEZE DRYING SYSTEM	LYODEL FREEZE DRYING SYSTEM	CENTER FOR DRUG DELIVERY SYSTEM	31-DEC-09	02-FEB-10	1	L309-01-10	3,00,000.00
50	ULTRASONIC PROCESSOR	VIBRA-CELL ULTRASONIC PROCESSOR	CENTER FOR DRUG DELIVERY SYSTEM	06-NOV-09	09-JUL-10	1	56069AB	3,13,618.00
51	FREEZER	- 80 DEG. CRYO FREEZER- 170L	MOLECULAR PHARMACOLOGY	10-SEP-09	09-OCT-09	1	031/09-10	3,00,000.00
52	CELL COUNTER	MEDONIC BLOOD CELL COUNTER	M.PHARM PHARMACOLOGY	28-AUG-09	21-OCT-09	1	8916	4,40,074.00
53	SEMI AUTO ANALYSER	MICROLAB 300SEMI AUTO ANALYSER	M.PHARM PHARMACOLOGY	28-AUG-09	21-OCT-09	1	9-5511	1,89,926.00
54	THIN LAYER CHROMATOGRAPHY	PLANAR HIGH PERFORMANCE TLC SYSTEM	M.PHARM PHARMACOLOGY	17-JUN-09	22-DEC-09	1	1611W002	25,03,443.00

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EQUIPMENT DETAILS ABOVE 1,00,000

S.NO	CATEGORY NAME	EQUIPMENT NAME	DEPARTMENT	PURCH DATE	INSTAL DATE	QTY	SERIAL NO	RATE
55	DATA ACQUISITION SYSTEM	WORX /214 FOUR CHANNEL DATA ACQUISITION SYSTEM	M.PHARM PHARMACOLOGY	20-MAR-09	17-JUN-09	1	RO3-3-8-213	3,29,402.00
56	DIGITAL PLETHYSMOMETER	DIGITAL PLETHYSMOMETER	M.PHARM PHARMACOLOGY	21-JAN-09	14-MAY-09	1	DP-1	1,71,703.00
57	MUFFLE FURNACE	LABLINE MUFFLE FURNACE	ANATOMY&PHYSIOLOGY LAB	23-JUN-08	13-AUG-08	1	08H-2339	1,71,142.00
58	VISCOMETER	VISCOMETER	PHARMACEUTICS PGLAB	20-JUN-08	11-JUL-08	1	E6528305	1,03,740.00
59	CENTRIFUGE	MICROCENTRIFUGE 5415R	MOLECULAR PHARMACOLOGY	22-MAY-08	05-NOV-08	1	5426XK425289	4,97,024.00
60	INCUBATOR	CO2 INCUBATOR	MOLECULAR PHARMACOLOGY	02-MAY-08	23-JUN-08	1	60406517	5,30,400.00
61	DISSOLUTION TEST APPARATUS	DISSOLUTION TEST APPARATUS	PHARMACEUTICS PGLAB	10-MAR-06	14-MAR-06	1	DT06190205	1,33,477.00
62	SPECTRO PHOTOMETER	UV SPECTRO PHOTOMETER	PHARMA ANALYSIS LAB	28-APR-04		1	A10774101018 LP	3,28,961.00
63	HPLC SYSTEM	VP SERIES BINARY GRADIENT HPLC SYSTEM	PHARMA ANALYSIS LAB	20-APR-04	20-APR-04	1	HPLC PHAM-I	9,89,900.00
64	TABLET PUNCHING MACHINE	AUTOMATIC TABLET PUNCHING MACHINE	PHARMACEUTICS PGLAB	23-JAN-03		1	1200399	1,15,814.00
Total:						64		4,42,50,037.50

