Oriental College of Pharmacy

Gravity

2017-18

Pharmacist's Oath

- I swear by the code of ethics of Pharmacy council of India in relation to the community and shall act as an integral part of healthcare team.
- I shall uphold the laws and standards governing my profession.
- I shall strive to perfect and enlarge my knowledge to contribute to the advancement of pharmacy and public health.
- I shall follow the system, which I considered the best for pharmaceutical care and counseling of patients.
- I shall endeavor to discover and manufacture drugs of quality to alleviate sufferings of humanity.
- I shall hold in confidence the knowledge gained about the patients in connection with professional practice and never divulge unless compelled to do so by the law.
- I shall associate with organizations having their objectives for betterment of the profession of pharmacy and make contribution to carry out the work of those organizations.
- While I continue to keep this oath inviolated, it may be granted to me to enjoy life and the practice of pharmacy respected by all, at all times.
- Should I trespass and violate this oath, may the reverse by my lot!

OUR PATRONS

PRESIDENT

PROF. JAVED IQBAL KHAN

Ex Minister of Education,

Housing and Labour,

Ex Chairman CIDCO.

TREASURER

MRS. HUMERA JAVED KHAN

Prin. Oriental College of Commerce & Management

MANAGING DIRECTOR

MR. WASEEM KHAN

M. S. Computer Science,

Washington University, U. S. A.

TRUSTEE

DR. AZEEM KHAN

M. S. Computer Science,

Columbia University, U. S.A.

From the President's Desk

It gives me immense pleasure to know that Oriental College of Pharmacy is publishing its 7th edition of annual magazine, "Gravity 2017-18".

"It is Supreme art of a teacher to awaken joy in creative expression and Knowledge"

- Albert Einstein

I believe every educational institution, makes a sincere venture to provide what is termed as 'quality education'. Education helps an individual to understand their duties and responsibilities and is the stepping stone towards progress. Also, in today's world, competition is on rise and one has to really make extra efforts to be able to live up to the set expectations.

I am happy to understand that the college is contributing to the needs of Healthcare System, Pharmaceutical Industries, Research and Development and Pharma Education of the country, through its students who come out successfully. I am also sure that this college magazine will represent the spirit, technical and literary talent hidden of the students and staff of the college to share their views.

As the President of college, I would like to congratulate the Principal, staff and students of Oriental College of Pharmacy towards this issue of "Gravity" magazine.

I wish enormous success for the Gravity 2017-2018.

Best wishes

Prof. Javed Khan

From the Managing Director's Desk

I am delighted to know that Oriental College of Pharmacy is coming up with its 7th edition of annual magazine "Gravity" for the academic year 2017-18.

Currently, pharmacy as a profession is providing a wide range of pharmacy services and it is expected that these services will grow further, especially in the view of rapidly advancing technology. Also, there are numerous career opportunities for pharma students; not only in the pharma field but also allied branches like medical insurance, biotechnology, hospitals and in the area of pharmaco-economics. We, at Oriental College of pharmacy are striving towards the holistic development of students to ensure that they are able to give their best in achieving their goals.

As I went through this year's magazine, I was happy to see the level of innovation and creativity amongst our students and the efforts made by them in bringing this colorful issue to the readers. Also, I was pleased to find out that the articles in technical section are at par with the current technical advances in pharmacy. I wish good luck to all my students and also congratulate them along with their teachers and the Principal of Oriental College of Pharmacy for an impressive issue of this year's magazine.

All the Best!!!

Mr. Waseem Khan

Magazine Committee 2017-18

Chief Editor

Dr. (Mrs.) Sudha Rathod

Associate Editor
Mrs Shilpa Dawre

Co-ordinator Co-editor
Mr. Paritosh Pathak

Ms. Nikita Talwar

Article Editors
Ms.Nikita Shelar
Ms.Tejaswini Navale
Mr.Abdullah Khan

Graphics and designing
Ms.Tanvi Thakare
Ms. Shruti Sawant

Photography and Sponsership
Mr. Abhay Yadav
Mr. Nitesh Gupta
Mr. Pravin Bangar

Technical board
Mr. Anurag Singh
Ms. Trupti Thakare

Editorial Board message

"It always seems impossible until it is done"

-Nelson Mandela

This sentence is an exact reflection of our thoughts when we initially accepted a plethora of tasks associated with the making of 7th edition of our annual college magazine. However, after the laughs, cries, hugs and all the hard work, we are proud to present to you a new and fresh version of "Gravity" for the academic year 2017-18.

Oriental College of Pharmacy has always been on the forefront in pharma arena and has achieved tremendous success in all its endeavors. The united efforts of entire team of OCP has made this year progressive by organizing seminars of national and international echelon, organizing industrial visits, workshops and social awareness campaigns. Additionally, our college has excelled in extracurricular activities and has shown supremacy in academics when one of our students topped the M.Pharm semester University examination. Our faculty members have successfully received grants from various agencies for performing active research in pharma field. We have tried our best to rope in bits and pieces of all these events in our magazine. Our magazine also presents to you a wide horizon of talent portrayed in the form of poetry, art, sketches, scientific and non scientific articles and hilarious jokes put forth by our students and teaching staff.

The job of editors is never easy and collective efforts are required to bring the magazine to life!!!! However, any accomplishment is not worth having unless we thank the ones who made it possible. We would like to take the opportunity to thank our Management, Principal, all teaching and non-teaching staff members, students and last but not the least our sponsors for their support and inspiration. Thank you all once again!!!!

We sincerely hope that you have a good time going through the pages of "Gravity" 2017-18.

Enjoy Reading!!!!

Regards,

The Editorial board
Oriental College of Pharmacy

Contents

Oriental College of Pharmacy (OCP): An Overview

The **Oriental Education Society (OES)** was established in the year 1992 under the dynamic leadership of well known educationist and former minister of education of the Government of Maharashtra, Prof. Javed Khan. The objective of OES is to provide quality education for excellence with fine exposure to practical knowledge of industry and business houses.

Oriental College of Pharmacy (OCP) was founded in 2004 under the aegis of Oriental Education Society. It is recognized by All India Council for Technical Education (AICTE), New Delhi, recognized by Pharmacy council of India (PCI) and is affiliated to the University of Mumbai. Additionally, the college has an animal house facility and holds CPSCEA approval till 2017. Building on its mission and tradition of excellence, the College offers a well developed and modern curriculum based graduate and post- graduate program in Pharmacy education. Currently, the college is offering fully fledged B. Pharm Course and M. Pharm courses three branches of pharmacy viz. Pharmaceutics, Quality Assurance, and Pharmacology.

As a private, independent, co-educational institution, OCP offers to its students a unique opportunity to integrate theoretical and applied knowledge in the health professions; so that graduates become enlightened thinkers as well as competent practitioners. The College's state-of-the-art laboratories along with the highly experienced and recognized faculty provide valuable hands-on learning and technical skills for the students. Located in the heart of Navi Mumbai at Sanpada, within walking distance from Sanpada railway station and spread over a three acre campus, OCP can provide students with resources unmatched by any other institution, thus creating a highly stimulating and inspiring environment for learning.

AICTE-CII, Survey of Industry Linked Technical Institutes

Declared Oriental College Of Pharmacy In

GOLD CATEGORY

Vision and Mission

Create competent Pharmacy graduates to contribute in the development of healthcare profession

M1: To create pharmacy graduates through motivated and experience faculty supported by good infrastructure.

M2: To encourage students and faculty towards research in the healthcare profession

M3: To inculcate social values and responsibilities for the betterment of the community healthcare

Our Principal Speaks

Editorial Board (EB): What are your views about the 7th edition of our college magazine?

Principal (P): 7th edition of college magazine gives me pleasure. Our college is publishing consecutively, 7th edition of magazine in the year 2018.

EB: What are your views on pharmacy as your career option in India as well as abroad?

P: In my view, pharmacy education is a versatile career. As there are so many avenues in India as well as abroad.

EB: Where do you see our college in near future?

P: Presently we are going for NATINAL BOARD OF ACCREDITATION (NBA), and i wish to see our college in first five in Mumbai and Maharashtra.

EB: What are your agenda's as a principal of OCP?

P: I want overall development in the college which comprises of high quality research, good amount of consultancy, patents and high level of education in the college.

EB: What key points will you suggest the students to achieve success in life?

P: The utmost important to achieve success in life is sincerity, honesty and hard work, these makes all the difference. Since, this is the era of changes every day so students should always keep themselves updated and should be able to accept the new changes in the profession. I would like to suggest the students should go for entrepreneurship as a government is also proactive.

EB: What efforts are taken in the research field in OCP?

P: The College is having all four branches of post graduate studies and recently granted research center in pharmaceutics. No college can grow without post graduate and doctor studies in the field of research and hence with the introduction of post graduate courses, the level of our college will definitely grow up.

EB: What are your views about extracurricular activity other than studies?

P: For the overall development of the student curricular as well as extracurricular activities are definitely helpful but in my view importance should always giving to curricular activities.

EB: Our College is going for National Board of Accreditation (NBA), how do you feel?

P: NBA is a very big task though it is easy for high level management and managements already in the field of education for many years. It's a challenge to a management who has recently introduced in the field of education since last many years of managements. From my side I am trying my level best to get accreditation for the college. As per as GPAT qualified students are concerned ours is the first college.

EB: Views on National Board of Accreditation (NBA)?

P: NBA credited colleges are definitely has position in the world. NBA is related with internal quality assurance system in the education. Even I'm in the favor of the norms and standards of NBA which definitely create complete profession.

EB: Tips and Mantra for students?

P: I m proud of being INDIAN and i wish that each and every student should be proud of our heritage and culture. Dedication and honesty are the two main mantras for anybody's career to reach to the top in the management of any organization.

Foundation of OCP

Teaching staff

Pharmaceutics department

	Name	Qualification	Designation
1	Dr (Mrs) Sudha Rathod	M.Pharm, Ph.D	Principal
2	Mr. S.K. Khar	M.Pharm	Asso. Professor
3	Dr. Pradnya Palekar – Shanbhag	M.Pharm, Ph.D	Asso. Professor
3	Mr. Ganesh Deshmukh	M.Pharm, Ph.D	Asst. Professor
4	Mr. Asish Dev	M.Pharm	Asst. Professor
5	Dr. Shilpa Dawre	M.Pharm, Ph.D	Asst. Professor

Pharmacology Department

	Name	Qualification	Designation
1	Dr(Mrs) Vanita Kanase	M.Pharm, Ph.D	Asst. Professor
2	Mr. Imtiyaz Ansari	M.Pharm	Asst. Professor
3	Dr. Sayyed Mateen	M.Pharm, Ph.D	Asst. Professor

Pharmacognosy Department

	Name	Qualification	Designation
1	Dr Mohib Khan	M.Pharm, Ph.D	Professor
2	Dr. (Mrs) Vandana Jain	M.Pharm, Ph.D	Asso. Professor

Pharmaceutical Chemistry & Quality Assurance Department

	Name	Qualification	Designation
1	Mr. Amjad Ali	M.Pharm, Ph.D	Asst. Professor
2	Dr. (Mrs.) Nutan Rao	M.Pharm, Ph.D	Asst. Professor
3	Mr. Amey Deshpande	M.Pharm	Asst. Professor
4	Mrs. Vaishali Mistry	M.Pharm	Asst. Professor
5	Ms. Pooja Gharat	M.Pharm	Asst. Professor
6	Ms. Shaikh Darakhshan Afreen	M.Pharm	Asst. Professor

Administration Department

Sr.No.	Name	Designation
1	Mrs. Surekha Gaikwad	Office Superintendant
2	Mr. Ramchandra Kalel	Head Clerk
3	Mrs.Irene N. Fernandes	Clerk
2	Mr. Vijay Gangurde	Attendant
6	Mazhar Sayyed	Computer Assistant
7	Mr. Nilesh Kharavate	Office Assistant
9	Mr.Pramod Rajadhyaksha	Store-in-charge
10	Mr. Anand Boddu	Store assistant

Library Staff

Sr.No.	Name	Designation
1	Ms.Arunadevi Lingam	Librarian
2	Mrs. Sadhana Kudale	Librarian Assistant

Laboratory Staff

Sr.No.	Name	Designation
1	Mr. Pramod Rajyadhyaksha	Store in charge
2	Ms. Deepali Kumbhar	Lab Assistant
3	Ms.Husneara Khan	Lab Assistant
4	Mr. Santosh Mane	Lab Assistant
5	Mrs.Shraddha Patil	Lab Assistant
6	Ms Afreen Khan	Lab Assistant
7	Ms Aman khan	Lab Assistant
8	Mr. Satish Gaikwad	Lab attendant
9	Mr. Mohan wagode	Lab attendant
10	Mr.Arvind Palve	Lab attendant
11	Mr. Mangesh Yerandkar	Lab attendant
12	Mr. Chandrakant Sawant	Lab attendant

Office Maintenance staff

Sr.No.	Name	Designation
1	Mr. Suresh Nikam	Mali
3	Mr. Prakash Janrao	Attendant
4	Mr.Jasim Ali Ansari	Attendant
5	Mrs. Rupali Sakpal	Attendant

6	Mr.Jitendra Mungekar	Accountant

Visiting Faculty

SR.NO	NAME	QUALIFICATION
1.	Mr. Shamsuddin Mulla	M. Pharm, L.L.B
2.	Mrs. Tarannum Naikwade	BEd, M.Sc. Biotechnology
3.	Dr.N. Sivprasad	PhD
4.	Mrs. Shailu Singh	
5.	DR. (Mrs). Manasi Gholkar	PhD(Tech), M. Pharm, PGDASS
6.	Mrs. Laxmichaya Kale	PhD, M.Phil , PGD in teaching, M.A
7.	Mrs. Ayalasomayajula Padamja Rao	M.Pharm
8.	Dr. Krishna Priya	PhD
9.	Mrs. Bharati Fegade	M.Pharm
10.	Dr. C.S. Ramaa	PhD(Tech), M.Pharm
11.	Dr.(Mrs). Aruna Jadhav	PhD(Tech), M.Pharm
12.	Prof.krishna Iyer	PhD,M.Pharm
13.	Mrs.Rupali Likhar	M.pharm
14.	Dr.(Mr).Vinod Gupta	PhD
15.	Dr. (Mr).Sandeep Patankar	phD
16.	Mrs.Shilpa Naik	

TEACHING STAFF

UNDERGRADUATE SECTION

First Year B.Pharm

Second year B.Pharm

Third year B.Pharm

Final Year B.Pharm

POSTGRADUATE SECTION

M.Pharm First Year

M.Pharm Second Year

POSTGRADUATE LAB FACILITIES

List of Instruments for PG Pharmaceutics

Sr. NO	Instrument Name	Quantity
1	Spherovzer & Extruder	01
2	Refrigerated centrifuge	01
3	Vortex mixer	01
4	Environmental test chamber	01
5	Disintegration test aparatus(single basket)	01
6	Friability test apparatus	01
7	Homogenizer	05
8	Sensitive electronic balance	01
9	Digital electronic balance	01
10	Double distillation unit	01
11	Dissolution test apparatus	01
12	Hot air oven	01
13	Refrigerator	01
14	Rotary Vacuum Evaporator	01
15	Microwave oven	01
16	Diffusion Cell Apparatus	01
17	Propeller type mechanical agitator	01
18	Mini Orbital Shaker	01

POSTGRADUATE LAB FACILITIES

Instruments for PG Pharmacology

Sl. No.	Name	Quantity
1	Microscope with stage micrometer	**21**
2	Digital Balance	**02**
3	Autoclave	**02**
4	Hot air oven	**02**
5	B.O.D.incubator	**1**
6	Refrigerator	**1**
7	Laminar air flow	**1**
8	Colony counter	**2**
9	Zone reader	**1**
10	Digital pH meter	**01**
11	Sterility testing unit	**01**
12	Camera Lucida	**15**
13	Eye piece micrometer	**15**
14	Incinerator	**1**
15	Moisture balance	**1**
16	Heating mantle	**15**
17	Flour meter	**02**
18	Vacuum pump	**2**
19	Micropipettes (Single and multi channeled)	**02**
20	Micro Centrifuge	**1**
21	**Projection Microscope**	**1**

Student Council

Non Teaching staff

STAR PERFORMERS

GPAT Qualifiers 2017

SR. No.	Name	Score
1	Mr. Mehtab khan	**178**
2	Ms harsha naik	**166**
3	Mr. Prashant auti	**159**
4	Mr. Ajaykumar raidas	**152**
5	Ms.anju kashyap	**141**
6	Ms.shefali dobani	**139**
7	Ms. Sunita chawla	**138**
8	Mr. Dilipkumar parmar	**136**
9	Ms.della dony	**119**
10	Mr.eyaldeva vijaykumar	**117**
11	Ms.neeta more	**91**
12	Ms uttara jaiswar	**82**
13	Mr.atiqurrehman khan	**116**
14	Mr mayur tikam	**117**
16	Mr vishal jain	**113**

Cmat Qualified students 2017

SR. No.	Name	Score
1	Ms.Kajol Sharma	**54.70**
2	Ms Anjali Singh	**76.28**

Scholarship @ OCP for 2017-18

S. No.	Scholarship Name	Total Number of students
1	Minority Scholarship, Govt of India& Maharastra	54
2	Social Welfare Dept scholarship, Govt of Maharashtra	14
3	Economically backward classes, DTE, Maharashtra	16
4	National Handicapped Finance and Development corporation	2
5	Tata Education and development Trust (PVT scholarship	6
6	AICTE Scholarship (M. Pharmacy Stipend)	4
7	India Bulls Foundation Scholarship (Private Scholarship)	3
	Total	99

OCP AT A GLANCE

Pharmaceutics Lab Pharma chemistry Lab Pharmacology Lab

Pharmacognosy Lab

Animal House

Staff Room

Store room

OCP library

At present, OCP library has 14,116 books and 1790 reference books covering Indian Pharmacopeia, British Pharmacopeia, pharmacology, pharmaceutical engineering, medical chemistry, pharmaceutics, quality assurance, Forensic pharmacy, organic chemistry, Biotechnology and management discipline. Library is continuously updated and replenished with latest editions of publications. About 26 professional journals are being subscribed. The library also has collection of 212 educational CD's. Internet facility for students is available during working hours. The library also provides internet access to the user with broadband connectivity to desktop computers and Wi-Fi connectivity to tablets. The library also has collection of reference books for the M.Pharm courses. Library housekeeping activities are computerized using E-Granthalaya software and its uses bar coded issue/return system for circulation.

Total Number of Books in the library (B.Pharm): 6366

Total Number or Titles: 2005

Total Number of M.Pharm Books

Pharmaceutics: 635

Quality Assurance: 245

Pharmacology: 239

Pharmacognosy: 24

Total number of Reference Books: 1790

Newspaper purchased in the library: 13

Total Number of CD's in the library: 212

Total Number of International Journals:9

Online Journals (Science Direct): 70

IPA-SF is a national forum for pharmacy students under the Indian Pharmaceutical Association. It aims to bring all pharmacy students under one umbrella so that their energies can be synergized to make a difference. Activities of IPA-Student Forum are guided by esteemed personalities of Indian pharma world. IPA aims at serving as a platform for students in India to come together and explore their absolute potential, contribute towards improving health care in India, promote leadership, professional and social contacts and to provide an exposure to the students at national and international level.

IPA SF MSB Incharge of OCP

Dr. Imtiyaz Ansari

Dr. Vanita Kanase

Joint Treasurer, IPA SF MSB

Mr. Juzar Nazafi

Editorial, IPA SF MSB

Mr. Ali Azmi

PRO, IPA SF MSB

Ms. Payal Dhuml

Cultural, IPA SF MSB

Miss. Olohav Valladres

PEO, IPA SF MSB

Ms. Riddhi Kini

SEO, IPA SF MSB

Ms. Janhavi Madhavi

Joint PHO, IPA SF MSB

Mr. Aditya Singh

Sports committee

Mr. Aditya More

ORIENTAL PHARMA ALUMNI ASSOCIATION (OPAA)

The chief patron of OPAA Prof. Javed khan with the co-ordination and co-operation of executive members of Alumni Association established OPAA in 2011. OPAA was formed with a sole objective to help Alumni compete with the practical challenges at various pharma sectors and to benefit our budding pharmacists. OPAA was registered on 17 Oct. 2011, bearing Registration No. MH/1624/11/Thane, under the Societies Registration Act 1860. The name and designation of Alumni Core Committee members are:

No.	Name	Designation
1	**Dr. (Mrs.) Sudha Rathod**	President
2	**Mr. Amjad Ali**	Secretary
3	**Mr. Samee Muqadam**	Treasurer
4	**Mr. Imtiyaz Ansari**	Member
5	**Mr. Khan Mohammad Tarique**	Member
6	**Mr. Umesh Bhanushali**	Member
7	**Mr. Tushar Bhosle**	Member

Objectives of OPAA:

- To help students view the practical experiences faced in the pharma field through the alumni and for implementation execution and application of knowledge acquired.
- The practical experience of the alumni has been given a platform where they would help students to learn from their experiences thereby directing them towards future.
- Directly or indirectly the alumni association is a channel for ex-students to be in touch with the college & revive their college days.

Convocation ceremony and Alumni Meet

Oriental Education Society's Oriental College of Pharmacy & Oriental Pharma Alumni Association (OPAA) celebrated convocation ceremony and alumni meet, on Saturday, 25th February 2017. The event was graced by Chief guest Mr. Atul Bhopale, Executive Director, Nexgen Pvt. Ltd.,Mumbai, Guest of honour, Mr. Krishnan Iyer, Director, Sitec Labs, Mumbai who presided over the convocation ceremony and alumni meet. Other guests on dais were Dr. (Mrs) Sudha Rathod, Principal and Dr. Mohib Khan, Professor Oriental College of Pharmacy.

Placement Cell @OCP

Oriental College of Pharmacy has a strong placement cell in order to provide job opportunities for students in the pharma industries. Every year, we have top pharma giants visiting our campus for conducting interviews for various positions in their respective organizations.

Placement cell In-charge

Dr. S.K.Kar
Dr. Firoz Khan

Student Members

1. Dhanashree Kadam
2. Drashti Maniyar
3. Divya Dube
4. Sujata Gupta
6. Aruna Rajpurohit
7. Viraj Sawant
8. Varsha Dhanawde
9. Jayesh Jain
10. Renudevi Prajapati

PLACEMENT SELECTION DETAILS FOR 2017-2018

PLACEMENT INCHARGE: S.K. KAR & Dr. Firoz Khan

DETAILS	2016-17
NO. OF STUDENTS PLACED	24
NO. OF STUDENTS OPTED FOR HIGHER STUDIES (HS)	23
TOTAL (PLACEMENT + HS)	47

PLACEMENT-CTC ANALYSIS

DETAILS	2016-17 (Lacs PA)
MAXIMUM CTC	2.76
MINIMUM CTC	1.32
AVERAGE CTC	2.05

RESEARCH AND PUBLICATIONS

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3. Sayyed Mateen, Mohib Khan, N. Devanna, M.Farooque, Javed Akhtar Ansari, Aziz-ur-Rahman. Potential Antiparkinsonian And Antidepressant Effects Of Methanolic Extract Of *Swertia Chirata* And *Hemidesmus Indicus* In Wistar Rats; European Journal of Biomedical and Pharmaceutical sciences. 2016, Volume 3, Issue 3, 470-479.(ISSN-2349-8870) 0.37
4. Abhilasha Mittal, Amjad Ali M. Iqbal, Mohib Khan, Firoz A. Kalam Khan., Synthesis of reserpine coupled 1,3,4-oxadiazole derivatives and their biological evaluations.; Journal of Innovations in Pharmaceutical and Biological Sciences. 4 (2017) 87-96 (ISSN-2349- 2759).
5. Ameesh Shukla and Vandana Jain, Method development and validation of RP-HPLC method for simultaneous estimation of paracetamol, phenylephrine hydrochloride and triprolidine hydrochloride in bulk and combined tablet dosage forms, World Journal of Pharmaceutical Research, 2017, Vol 6, Issue 9,483- 492. (2277-7105)
6. Shaheen Sheikh, Vandana Jain, Development and validation of RP-HPLC method for simultaneous estimation of Resveratrol and Curcumin in herbal formulation, European journal of Biomedical and Pharmaceutical science, 2017, Vol. 4, Issue 7, 730-734.
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10. Vandana Jain, Mohd Shadab Shaikh, Ojaswi Ghadge and Sudha Rathod, Analytical method development and validation for the simultaneous estimation of Terbutaline sulphate and Guaiphenesin in tablet dosage form by RP-HPLC, Der Pharma Chemica, 2016, 8 (19):70-75.
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12. Javed S. Shaikh, Dr. Nutan N. Rao, "*Troubleshooting* and maintenance of high-performance liquid chromatography- A Review", World Journal of Pharmaceutical Sciences, 2017, 5(12): 162-169.
13. Javed S. Shaikh, Dr. Nutan N. Rao, "Simultaneous Estimation And Forced Degradation Studies Of Amiloride Hydrochloride And Hydrochlorothiazide in a Pharmaceutical Dosage Form Using Rp-Hplc Method", International Journal of Research in Pharmaceutical and Nanoscience, (Manuscript number: IJRPNS - 0303/2017)
14. Shefali Barkat Dobani, Dr. Nutan Rao and Dr. Sudha Rathod, Cancer; an Introduction and recent advances in anticancer drugs, World Journal of Pharmaceutical Research, 2016, Volume 5, Issue 7, 488-505 (ISSN:2277-7105 IF 0.65)
15. AS Shaikh, M Khan, Mohammed Ibrahim, Development of Quality Control Parameters for Standardization of Leaves of Ficus Species, International Journal of Pharmacognosy and Phytochemical Research; 8(5); 800-806, 2016.(ISSN: 0975-4873 IF 1.8)
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17. S Ahmad, M Khan, R Akhtar, M Imran, NV Deore, Isolation and Characterization of B-Sitosterol from Tephrosia villosa Pers, International Journal of Pharmacognosy, Vol. 3 (9) page 400-404, 2016. (ISSN (Online): 2348-3962)
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20. Asif Rasheed, M Khan, RK Varma, AH Thayyil, Evaluation of Protective Effect of Physalis angulata Leaves on Experimentally induced Hepatotoxicity In Rats, Advances in Pharmacology and Toxicology 17 (2), 9, 2017 (ISSN-0973-2381.
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EDUCATIONAL & GUIDANCE SEMINARS/EVENTS

Personality development program

- A personality development was organized by Oriental College of Pharmacy for 1st Year B.Pharm students on 16th September 2017. The experiential workshop was carried out by **Mrs. Vasundhara Jakka, Corporate Trainer, Mindspark consultants**. Students actively participated in group activities involving improvement of communication, time management, stress management etc. Our principal Dr. (Mrs). Sudha Rathod presented awards to the winners of activities.

- Orientation program for B.Pharm 1st year organized on 19th August 2017 by principal Dr. (Mrs). Sudha Rathod.

- Oriental College of Pharmacy organized a career guidance lecture 'MS versus MBA' by **Mr. Abhishek Narayana,** an initiative by **Endeavor Careers Pvt. Ltd** on Saturday, 22nd July 2017. Target audience for this session was 3rd and 4th year B. Pharm students.

- A guest lecture on 'MBA in Health care administration' was organized on 3rd March, 2017 and delivered by **Mr. Rohan Gawande** of Armeit School in association with MUHS. 4th year B.Pharm students attended the lecture and got their doubts clarified.

- Oriental college of Pharmacy had organized a lecture on 'Avenues and scope in Pharmaceutical Industry' on 14th January, 2017. Eminent speaker **Dr. Anthony Melvin Crasto**, Principal Scientist, Glenmark R&D addressed the Final Year B. Pharm students and M. Pharm students regarding the options in career after graduation and post graduation.

Awareness programs

The students of Oriental College of pharmacy conducted various awareness program which is the utmost requirement for common people. In current scenario various deadly diseases attacking humans. Therefore there is need of awareness campaigns. The following awareness campaigns have been conducted by student in 2017

Free health check up -	12th Aug, 2017
Second health check up	23rd Dec, 2017
Anti HIV Awareness campaign-	6th Jan, 2017
Blood Donation Camp	6th Aug, 2017
Anti Arthritis awareness Camp	12th Oct, 2017

Awareness Program glimpse

Activity moments at ocp

Fun Moments

Malaria a Disease without Boundaries

Introduction

Malaria, a protozoan infectious disease, poses a significant threat to global health with 40% of the world's population being vulnerable to it. It is especially a major health concern in sub-Saharan countries, which recorded the death of 630,000 people in the year 2012. The mortality rate of malaria is hypothesized to be twice the recorded number, when considering the undiagnosed and untreated cases of malaria. Malaria is caused when one of the several strains of the protozoan *Plasmodium* invades red blood cells (RBCs). An infected female *Anopheles* mosquito is responsible for introducing the parasite in human bloodstream. Of the various strains of *Plasmodium*, *Plasmodium falciparum* brings about the most severe form of infection. The malarial parasite has a complicated life cycle, which needs to be taken into account when planning strategies to manage the infection.

Anti-malarial drugs

The use of chemotherapy is the single most effective option to treat malaria. The alkaloid Quinine and its derivatives were the first drugs used to treat malaria. The Quinine analogue quinolone chloriquine (CQ) was the most successful anti-malarial drug, until development of resistance to CQ by the malarial parasite was observed. Primaquine is the only drug which has a fatal effect of the malarial parasite when it is in its liver stage and transmission stage. But due the adverse effects exhibited by the drug on humans, its use is limited.

The **synthetic compound 'quinolone'**, which is known for its anti-bacterial properties, has a promising potential as an anti-malarial compound. This group of antibiotics, characterized by the presence of
quinolone scaffold (4-hydroxyquinoline), shows the ability to target the malarial parasite at various stages of its development. The drug, artemisinin, and its

derivatives called ‘artemisinins’ are widely used anti-malarial drugs. To prevent the development of parasite resistance against artemisinins, the WHO recommended artemisinin combination therapy (**ACT**) to treat malaria. ACT uses artemisinin or one of its derivatives is combined with a longer half-life anti-malarial drug to act on the malarial parasite. The logic behind the use of ACT is that the artemisinin, which is fast-acting and has a short pharmacological half-life, clears out most of the parasitic load; while its partner drug, which has a longer half-life, continues acting even after the artemisinin level has dropped below sub-therapeutic levels. ACT has been the first line
treatment for *P. falciparum* malaria since 2006.

Mechanism of Action

Chloroquinine acts by inhibiting the formation of the biocrystal ‘hemozoin ‘, also called the malarial pigment, by the malarial parasite. This leads to the accumulation of free heme, which is toxic to the malarial parasite. The mechanism of action of primaquine is not fully understood. Quinolones have the ability to inhibit DNA replication. They achieve this by hindering the production of enzymes essential for DNA replication. Quinolones can enter cells easily and are therefore used to eliminate intracellular pathogens. It is believed that artemisinin brings about the generation of free radicals by interacting with Fe(II) found in heme proteins. The peroxide bond of artemisinin is thought to undergo cleavage which produces toxic oxygen radicals and kills the parasite.

Drug Resistance

Dealing with drug resistance is a great challenge that needs to be dealt with in order to treat malaria. Resistance to anti-malarial drugs occurs due to spontaneous mutation in the parasite, which reduces its susceptibility to a given class of drugs. Even a single point mutation has been found to bring about resistance to some drugs, while other drug resistances require multiple mutations. The malarial parasite has developed resistance to most of the chemotherapeutic agents used for treatment. Steps should be taken to prevent the spread of resistance and the development of new anti-malarial drugs should be the point of focus.

Malaria Vaccine

Development of a malaria vaccine is a challenging task due to the complexities in the antigenic properties and the life-cycle of the malarial parasite. Extensive research is being carried out to develop a vaccine that will help eradicate malaria. Despite these efforts, no FDA approved malaria vaccine has been developed to date.

Conclusion

The development of anti-malarial drugs is of great importance, given its grave consequences when left untreated. New drugs being developed to treat malaria should have a high efficacy rate, low toxicity index and should be cost-effective. Drugs that target the parasite at its various developmental stages have a greater potential to treat malaria. The ACT approach to treatment is a balanced one, yet more research is required in order to eradicate malaria.

Dr Deepali Gangrade

Associate Professor in Pharmaceutical Chemistry

EVALUATION OF ANTIULCER ACTIVITY OF AQUEOUS EXTRACT OF *CAPPARIS MOONII* OF ALBINO RATS

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ABSTRACT

The present study is designed to explore the mechanism of action formulation of *Capparis moonii* against experimentally induced gastric ulcers. The effect of Aqueous extracts of *Capparis moonii was* investigated in rats to evaluate the anti-ulcer activity by using three models, i.e. Aspirin, Alcohol and pyloric ligation models experimentally induced gastric ulcer. The parameters taken to assess anti-ulcer activity were volume of gastric secretion, PH, free acidity, total acidity, ulcer score and ulcer index. Omeprazole (20mg/kg) was used as positive control. The results indicate that the aqueous extract of *capparis moonii* (AECM) significantly ($P < 0.05$) decreases the volume of gastric acid secretion, PH, free acidity, total acidity, ulcer score and ulcer index with respect to control and comparable with Omeprazole.

KEYWORDS: *Capparis Moonii*, Anti-Ulcer, Pyloric Ligation, Gastric Secretion, Ulcer Index

INTRODUCTION:

Peptic ulcer is the most common ulcer found in the human beings. Peptic ulcer, also known as *ulcus pepticum*, PUD or peptic ulcer disease, is an ulcer (defined as mucosal erosions equal to or greater than 0.5 cm) of an area of the gastrointestinal tract that is usually acidic and thus extremely painful. Peptic ulceration is one of the common disease affecting millions of people. Excessive stress, smoking, chronic alcohol intake, H. pylori bacterial infection and chronic usage of non-steroidal anti-inflammatory drugs are main causes of peptic ulcer. Main manifestations include abdominal pain, mucosal bleeding and inflammation in patients [(1) (2)]. Gastroprotective and aggressive imbalance results in ulcer [(3)]. The aggressive and protective factors in the stomach are acid pepsin secretion, mucosal barrier, blood flow, cellular regeneration, prostaglandins and epidermal growth factors. Sometimes the gastric mucosa is continuously exposed to potentially injurious agents such as pepsin, bile acids, food ingredients, bacterial products and drugs. Factors such as stress, smoking, nutritional deficiency and ingestion of NSAID'S all can increase the incidence of gastric ulcers. It is reported that prolonged anxiety, emotional stress, haemorrhagic surgical shock, burns and trauma are known to cause severe gastric irritation. [(4)] Research advances during last decade have offered new insights in the therapy and prevention of peptic ulceration. Although drug treatment for peptic ulceration has improved in the recent past, the need for better therapy is still prevailing. Various mechanisms to treat ulcers are stimulation of epithelial cell proliferation, blocking apoptosis, promotion of gastro-protection and inhibition of gastric acid secretion. Most of conventional drugs used for treating ulcers are reported with ADRs, and drug interactions. [(5)]

Capparis moonii Wight (belonging to family: Capparidaceae/Capparacea) commonly known as Large Caper, Rudanti in Sanskrit and Waghati in Marathi, is distributed in Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu. Large Caper is the largest flower among all Caper flowers. The main active compounds present in the fruits of Rudanti are sitosterol, stachyhydrin, rutin, Gallotannins (chebulinic acid derivatives).

Therapeutic Uses of Rudanti in Ayurveda are: [6]

- Rudanti nourishes each and every cell of the body (Rasayani). It is useful in under nutrition and emaciating conditions (Shoshghani). It delays the signs of aging (JaraVinashnam) and is also useful in diseases which are having devastating effects on all the systems of the body (Rajyakshma Shasyate).
- Rudanti has also been extensively used to get relief from asthma and cough by the people of India. Physical, chemical and physiological factors may lead to gastric ulceration in humans and experimental animals.

Reactive oxygen species (ROS) are reported in the pathophysiology of human diseases such as neurodegenerative inflammation, viral infections autoimmune GI inflammation and gastric ulcer. [6]

The results were comparable with the standard drug silymarin. (Prevention of carbon – tetra-chloride induced hepatoxicity by the ethanolic extracts of Capparis moonii in rats (Pharma Biology, 42:286(2004) According to the literature survey there is no reported research on immunomodulatory activity so our main objective was to explore immunomodulatory activity.

Actions: -

- Fruit is used in puerperal sepsis and septic wounds, also for debility and cough. [7]
- EtOH (50%) extract of aerial parts is CNS depressant.
- Fruits contain L-stachydrine, rutin and beta-sitosterol.

A. CNS depressant activity:

Fruit of Capparis moonii are used in the treatment of sepsis and septic wounds and the seeds are used for the treatment of cough. Ethanolic (50%) extract of aerial parts of Capparis moonii is CNS depressant. [8]

B. Tuberculostatic Activity:

Capparis moonii fruit powder doesn't have significant antituberculosis or bactericidal activity, whereas the seeds show slight activity. Capparis moonii fruit powder preparation exhibited anti-tuberculosis or bacteriostatic activity on Staphylococcus aureus (slight inhibitory effect) and marked effect on Shigella flexineri. [8]

C. Insulinomimetic Activity:

The two-new hydrolysable gallotannins, chebulinic acid derivatives obtained from the fruits of Capparis moonii, showed their significant effect on glucose uptake, IR-b phosphorylation, IRS-1 phosphorylation, GLUT4 and PI3-kinase mRNA expression in the L6 cells. The new compounds were isolated using bioassay guided fractionation technique and characterized using IR, MS, 1D and 2D NMR spectroscopic techniques. This is the first report of gallotannins from the fruits of Capparis moonii. Two new gallotannins were isolated and their antidiabetic activities were evaluated. They appeared to be primarily acting through stimulation of insulin signalling pathway, by major

down signalling events on the insulin pathways (i.e., IR beta subunit and IRS-1 phosphorylation, PI3K and GLUT4 mRNA expression in L6 cells). The gallotannins may be regarded as potential candidates for development of new antidiabetic drugs. [9]

D. Anti-hepatotoxicity

The effect of the ethanol extract of C. moonii fruits was studied in carbon tetrachloride induced hepatotoxicity in rats. The hepatotoxicity was induced in rats with the administration of 1:1 (v/v) mixture of tetrachloride olive oil at the dose of 1ml/kg subcutaneously on day 7. The Ethanolic extract of C. moonii (200 mg/kg) and the standard drug Silymarin (25 mg/kg) were given orally from day 1 to day 9. The results were comparable with the standard drug Silymarin. The extract of C. moonii produced significant ($p<0.001$) lowering of the elevated serum glutamic oxalo acetic transaminase (SGOT), serum glutamic pyruvate transaminase (SGPT), (ALP) and a rise of depleted total protein when compared with the toxic control was reported. [10]

MATERIAL AND METHODS:

MATERIALS:

Collection of plant material:

Fruits of Capparis moonii, were purchased from local suppliers in Jan. 2012 and authenticated from Agharkar Research Institute, Pune, India. The voucher specimen (No. F-176) was deposited in the herbarium of the Institute for future reference. The fruits were cut into small pieces and dried at controlled temperature 45°C and powdered.

Preparation of extract:

The fruits were dried and powdered by grinding and sieved with a 44 # sieve. The powder was then kept in soxhlet apparatus with water for 24 h. (3 cycles of 8hrs). Later the extract was filtered and dried at 45°C (yield 7.46%). Extract was refrigerated at 4°C and used later.

Chemicals:

Ethanol (95%), HCI ,0.01N NaOH, Phenolphthalein, Aspirin, Omeprazole, aqueous extract of capparis moonii (AECM) and carboxy methyl cellulose (CMC) were used in the study.

Animals:

The study was conducted on Albino Wistar rats of 150-200 g and maintained under standard conditions (room temperature 24- 27°C and humidity 60-65%) with 12 h light and dark cycle. The food in the form of dry pellets (Amrut Lab., Pune) and water were available *ad libitum*. Rats of either sex, were randomly allocated to groups of 6 animals each. The study was approved by the Institutional Animal Ethical Committee (IAEC) of Oriental College of Pharmacy, Sanpada, Navi Mumbai under the approval number OCP/IAEC/2015-2016/10.

Methods:

Pylorus ligation induced ulcer model:

Wistar rats weighing between (160-200 gm) were divided into 4 groups of 6 rats in each. They were under fasting for 24 hrs with water ad libitum prior to experiment in individual cages with measures taken to avoid coprophagy. Group A was served as normal control given with vehicle only. Group B with standard i.e., Omeprazole and groups C and D were treated with doses of 100mg/kg and 200 mg/kg of AECM respectively. The various groups were treated with vehicle/drug/ extracts 30 min prior to pylorus ligation and the details of the protocol was given below: Group I: Normal animals treated with vehicle only; Group II: Standard i.e., Omeprazole (20 mg/kg p.o); Group III: AECM (100 mg/kg); Group IV: AECM (200 mg/kg). [(11)]

Pyloric ligation was done by ligating the pyloric end of stomach of rats of respective groups under ether anaesthesia at a dose of 35mg/kg of body weight. Ligation was done without causing any damage to the blood supply of the stomach. Animals were allowed to recover and stabilize in individual cages and were deprived of water during post-operative period. After 4hrs of surgery, rats were sacrificed. The stomach was opened and the Gastric contents were collected. Volume of gastric content was measured and then centrifuged at 1000rpm for 10min. 1ml of the supernatant liquid was pipetted out and diluted to 10ml with distilled water. The solution was titrated against 0.01N NaOH using phenolphthalein as indicator, to the end point when the solution turned to orange colour. The volume of NaOH needed was taken as corresponding free acidity. Titration was further continued till the solution regained pink colour. The volume of NaOH noted was taken as corresponding to total acidity.

Aspirin-induced ulcer model:

Wistar rats weighing between (160-200 gm) were divided into 4 groups of 6 rats in each. They were under fasting for 24 hrs with water ad libitum prior to experiment in individual cages with measures taken to avoid coprophagy. Group I was served as normal control given with vehicle only. Group II with standard i.e., Omeprazole and groups III and IV were treated with doses of 100mg/kg and 200 mg/kg of AECM respectively.

The First group was given 2ml/kg of saline (water), the Second group was given 20mg/kg Omeprazole and the Third and Fourth group were given 100mg/kg and 200mg/kg respectively of AECM for 8 days, then after 8days, the animals were fasted for 24hours.Ulcer were produced by administration of aqueous suspension of aspirin (200 mg/kg) on day of sacrifice. After 4hours the animals were sacrificed and the stomach was opened to calculate ulcer index by Kunchandy Method.[(12)]

Alcohol-induced ulcer model:

Wistar rats weighing between (160-200 gm) were divided into 4 groups of 6 rats in each. They were under fasting for 24 hrs with water ad libitum prior to experiment in individual cages with measures taken to avoid coprophagy. Group I was served as normal control given with vehicle only. Group II with standard i.e., Omeprazole and groups III and IV were treated with doses of 100mg/kg and 200 mg/kg of AECM respectively.

After 1 hour, 1ml of 95% ethanol was orally administered. Animals were then sacrificed by cervical dislocation. 1 hour after ethanol administration, stomach was cut open along the greater curvature and pined out on soft boards.[(13)]

Protection from ulcer formation by the standard drug and AECM were established by comparing ulcer scores of treated with untreated negative control groups. The ulcer scores were measured microscopically with the help of Microscope (10X).

Ulcer score will be as follows: -[14]

Sr. No.	Stomach Colour	Ulcer score
1.	Normal colour	0
2.	Red colour	0-5
3.	Red spots	1
4.	Hemorrhagic streaks	1.5
5.	3>5 ulcers	2
6.	<5 ulcers	3

CALCULATIONS:[15]

- Calculation of Ulcer Index: -

$U_I = U_N + U_S + U_P \times 10^{-1}$
U_I=Ulcer index
U_N=Average of number of ulcer per animal.
U_S=average of severity score.
U_P= Percentage of animals with ulcer.

- Determination of Acidity: -

$$\text{Acidity} = \frac{\text{Volume of NaOH X Normality of NaOH X 100}}{0.1} \quad \text{mEg/L}$$

- Determination of % Protection: -

$$\% \text{ Protection} = \frac{\text{Control means ulcer index – Test mean ulcer index x 100}}{\text{Control mean ulcer index}}$$

STATISTICAL ANALYSIS:

All the results were reported as mean ±S.E. Significance of the difference between "control" and" drug treated" were determined by the student "t" test.

Table 1: - Effect of AECM against pylorus ligation induced gastric ulcer in albino rats.

Treatment	Dose	Volume of gastric juice(ml/4h)	pH of gastric juice	Free acidity (mEq/L)	Total acidity (mEq/L)	Ulcer index	% protection of ulcer index
Control (normal Saline)	2mL/kg	5.98±0.3	2.08±0.14	55.04±1.45	79.45±1.65	6.55±0.65	_
Standard (Omeprazole)	20mg/kg	2.12±0.12	4.51±0.17	15.07±1.16	31.04±2.64	1.05±0.07	83.96
Test group 1 (AECM)	100mg/kg	3.77±0.13	3.12±0.14	27.89±0.65	56.31±0.79	2.30±0.23	64.88
Test group 2 (AECM)	200mg/kg	3.24±0.14	3.73±0.15	15.97±0.64	37.67±0.89	1.47±0.27	77.55

Table2:- Effect of AECM against Aspirin and Alcohol induced gastric ulcer in albino rats.

TREATMENT	DOSE	ASPIRIN		ALCOHOL	
		ULCER INDEX	% ULCER PROTECTION	ULCER INDEX	% ULCER PROTECTION
CONTROL (NORMAL SALINE)	2ml/kg	6.4 ±1.2	_	6.4 ±0.4	_
STANDARD (OMEPRAZOLE)	20mg/kg	1.4 ±0.5	78.12%	1.4±0.2	78.12%
TEST GROUP 1 (AECM)	100mg/kg	4.56 ±0.60	28.75%	4.51±0.24	23.59%
TEST GROUP 2 (AECM)	200mg/kg	2.71 ±0.90	57.65%	2.69±0.3	57.96%

DISCUSSION:

The anti-ulcer activity of the plant of C. moonii was evaluated by employing aspirin, alcohol and pylorus ligation ulcer models. These models represent some of the most common causes of gastric ulcer in humans. Many factors and mechanisms are implicated in the ulcerogenesis and gastric mucosal damage induced by different models employed in the present study involving, depletion of gastric wall, mucin mucosal damage induced by non- steroidal

anti-inflammatory drugs and free radical production.[16] NSAID's like aspirin causes gastric mucosal damage by decreasing prostaglandin levels through inhibition of prostaglandin synthesis. [16]Aqueous extract of the plant of C. moonii was significantly effective in protecting gastric mucosa against aspirin induced ulcers at all the dose level studied. Ethanol induced gastric injury is associated with significant production of oxygen free radicals leading to increased lipid peroxidation, which causes damage to cell and cell membrane.[18] The extracts of the C. moonii has significantly protected the gastric mucosa against ethanol challenge as shown by reduced values of lesion index as compared to control group suggesting its potent cytoprotective effect. It has been proposed that in pyloric ligation, the digestive effect of accumulated gastric juice and interference of gastric blood circulation are responsible for induction of ulceration.[19] The antiulcer activity of C. moonii extracts in pylorus ligation model is evident from its significant reduction in gastric volume, total acidity, free acidity, ulcer index and increase in pH of gastric juice. Because of animals treated with C. moonii extracts significantly inhibited the formation of pylorus ulcer in the stomach and also decreased both acid concentration, gastric volume and increased the pH values. It is suggested that C. moonii extracts can suppress gastric damage induced by aggressive factors. It is generally accepted that gastric ulcers result from an imbalance between aggressive factors and the maintenance of the mucosal integrity through endogenous defence mechanisms. [20] The excess gastric acid formation by prostaglandin (pg) includes both increase in mucosal resistance as well as a decrease in aggressive factors, mainly acid and pepsin.[21] Inhibitions of pg synthesis by aspirin coincide with the earlier stages of damage to the cell membrane of mucosal, parietal and endothelial cells. [22] The preliminary phytochemical studies revealed the presence of flavonoids in aqueous extract of C. moonii; various flavonoids have been reported for its anti-ulcerogenic activity with good level of gastric protection. [23] [24] So the possible mechanism of antiulcer action of C. moonii may be due to its flavonoid content. In this study we observed that C. moonii provides significant anti-ulcer activity against gastric ulcers in rats.

RESULT:

The aqueous extract of C. moonii showed the significant antiulcer activity in all the models. In pylorus ligation model the activity of AECM is nearly similar to that of standard. Whereas in Aspirin-induced and Alcohol-induced ulcers, the activity was found to be significant yet less than standard. It is also seen that the activity in Aspirin-induced and Alcohol-induced ulcers was concentration dependant, as 200mg/kg dose shows more therapeutic action than 100 mg/kg.

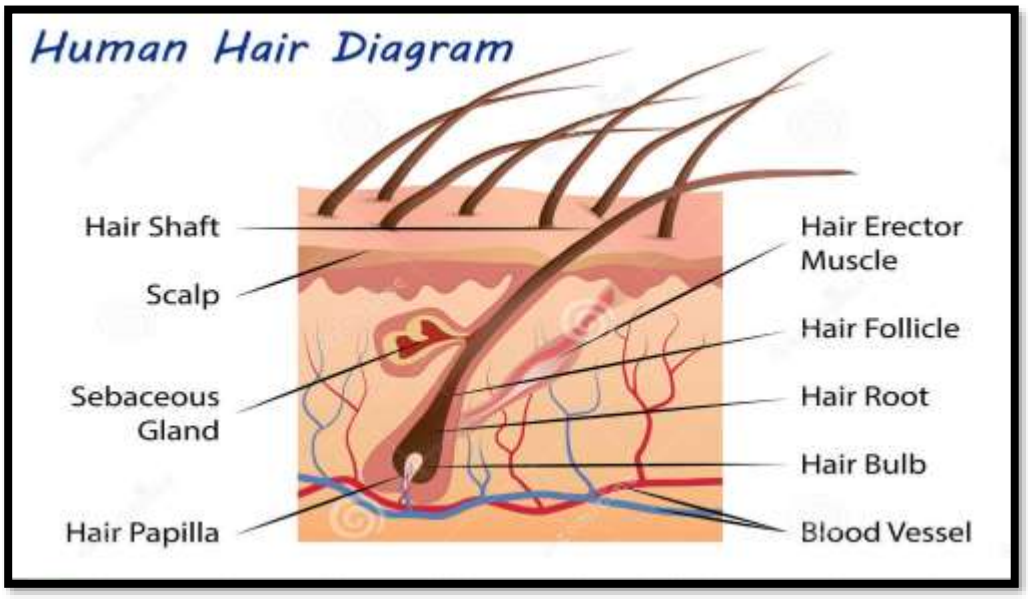
HAIR GROWTH PREPARATION OF MINOXIDIL AND CASTOR OIL AS EMULGEL

Author Name:-Dr.(Mrs.) Sudha Rathod , Soniya Devasani .

Presented by. Sanjeev Verma (2nd year M.pharma . pharmaceutics)

Introduction

Topical drug delivery can be defined as the application of a drug containing formulation to the skin to treat cutaneous disorder. Dermatological products applied to skin are diversified from liquid to powder but the most popular are semisolid preparation. Gel formulations provide faster drug release compared with others. When gels and emulsions are used in combined form the dosage forms are referred as Emulgels. In fact, the presence of a gelling agent in the water phase converts a classical emulsion into an emulgel. Direct (oil-in-water) system is used to entrap lipophilic drugs where as hydrophilic drugs are encapsulated in the reverse (water-in-oil) system. Emulgels for dermatological use have several favourable properties such as being thixotropic, easily spreadable, easily removable, emollient, nonstaining, watersoluble, longer shelf life, transparent.



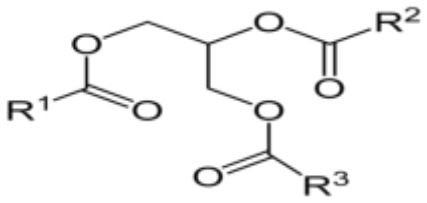
Formulation development.

Minoxidil and Castor oil emulgel was prepared by using Castor oil as emulsion base, tween 80 and span 80 as emulsifiers and Carbopol-934 as gelling agent. Castor oil emulgel and Minoxidil with Castor oil emulgel were formulated as topical drug delivery system for its use in treatment of hair loss and for better hair growth. Various batches were prepared and studies for invitro drug release has been performed. In vivo hair growth studies were performed on male albino mice weighing 30-50gm each. After 21 days of application of the prepared formulation(1% Minoxidil+castor oil) and marketed preparation,(5% Minoxidil), the hair were plucked and examined for diameter,length and density. 5 group namely Normal Control,Placebo Control,Castor Oil Emulgel,Minoxidil with Castor oil Emulgel and Marketed preparation were made which include 6 mice each. The order of increase in diameter was observed as Castor oil emulgel > Minoxidil with Castor oil emulgel > Marketed Minoxidil gel > Normal Control > Placebo. The order of increase in length was observed to be Castor oil emulgel > Minoxidil and Castor oil

emulgel > Marketed Minoxidil gel > Normal Control > Placebo. As far as Density of Hair is concerned the order was Minoxidil with castor oil>Minoxidil>Casotor oil>Normal Control>Placebo.The Stability Studies were performed on preparation at Accelerated temperature and the preparation was found to be stable.

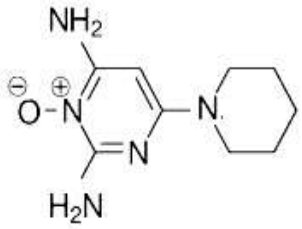
Drug profile.

CASTOR OIL:-Castor oil is a vegetable oil obtained by pressing the seeds of the castor oil plant (*Ricinus communis*). Castor oil found to be effective in hair growth management. It prevents in greying of hair and increases the density of hair.



R^1=Ricinoleic acid, R^2=Oleic acid ,R^3=Linoleic acid

MINOXIDIL:-Minoxidil is a Class-I potent drug used In the topical treatment (regrowth) of androgenic alopecia in males and females and stabilisation of hair loss in patients with androgenic alopecia.

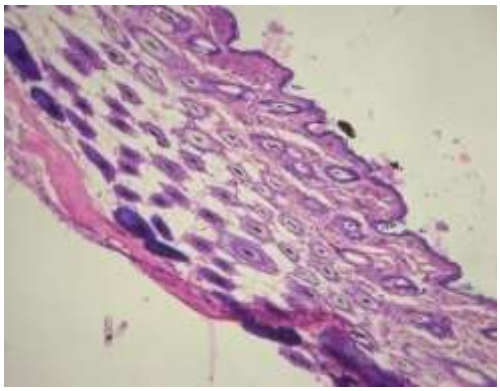


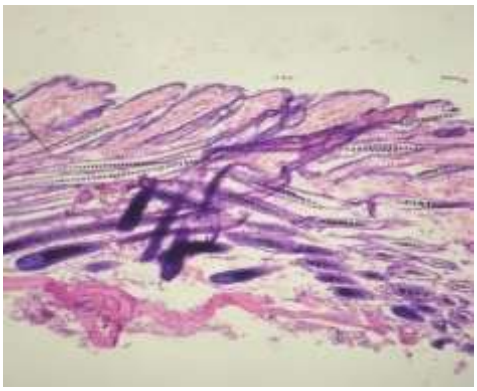
Experimental Studies In vitro:-

Minoxidil and Castor oil Emulgel

Minoxidil with Castor oil Emulgel

Marketed preparation





Result and Discussion

Mouse Code	Average number of hair follicle per low power(10*10)X microscopic field
Normal Control	30
Castor oil	35
Minoxidil	40
Minoxidil with castor oil	60

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SOPHIA-THE HUMANOID ROBOT

Dr. Nutan Rao

On October 25-2017, Sophia, a delicate looking woman with doe-brown eyes and long fluttery eyelashes made international headlines. She'd become a full citizen of Saudi Arabia -- the first robot in the world to achieve such a status.

Sophia is a social humanoid robot developed by Hong Kong-based company Hanson Robotics. Sophia was activated on April 19, 2015 and made her first public appearance at South by Southwest Festival (SXSW) in mid-March 2016 in Austin, Texas, United States. She is able to display more than 62 facial expressions. Sophia has been covered by media around the globe and has participated in many high-profile interviews. While interviewers around the world have been impressed by the sophistication of many of Sophia's responses to their questions, the bulk of Sophia's meaningful statements are believed by experts to be somewhat scripted. In October 2017, the robot became a Saudi Arabian citizen, the first robot to receive citizenship of any country. "I am very honored and proud of this unique distinction. This is historical to be the first robot in the world to be recognized with a citizenship," Sophia said, announcing her new status during the Future Investment Initiative Conference in Riyadh, Saudi Arabia. Standing behind a podium as she spoke, to all effects, she presented a humanoid form -- excepting the shimmery metal cap of her head, where hair would be on a human head. In November 2017, Sophia was named the United Nations Development Programme's first ever Innovation Champion, and the first non-human to be given any United Nations title.

According to the manufacturer, David Hanson, Sophia uses artificial intelligence, visual data processing and facial recognition. Sophia also imitates human gestures and facial expressions and is able to answer certain questions and to make simple conversations on

predefined topics (e.g. on the weather). Sophia uses voice recognition technology from Alphabet Inc. (parent company of Google) and is designed to get smarter over time. Sophia's intelligence software is designed by Singularity NET. The AI program analyses conversations and extracts data that allows her to improve responses in the future. Hanson designed Sophia to be a suitable companion for the elderly at nursing homes, or to help crowds at large events or parks. He has said that he hopes that the robot can ultimately interact with other humans sufficiently to gain social skills.

Sophia has seven robot humanoid "siblings" who were also created by Hanson Robotics. Fellow Hanson robots are Alice, Albert Einstein Hubo, Bina48, Han, Jules, Professor Einstein, Philip K. Dick Android, Zeno, and Joey Chaotic. In December 2017, fellow Hanson robot BINA48 passed a college course on philosophy and love taught by Professor William J. Barry at Notre Dame de Namur University.

Cameras within her eyes combined with computer algorithms allow Sophia to see. She can follow faces, sustain eye contact, and recognize individuals. She is able to process speech and have conversations using Alphabet's Google Chrome voice recognition technology and other tools. Around January 2018 Sophia was upgraded with functional legs and the ability to walk.

Sophia is conceptually similar to the computer program ELIZA, which was one of the first attempts at simulating a human conversation. The software has been programmed to give pre-written responses to specific questions or phrases, like a chatbot. These responses are used to create the illusion that the robot is able to understand conversation, including stock answers to questions like "Is the door open or shut?" The information is shared in a cloud network which allows input and responses to be analysed with blockchain technology.

David Hanson has said that Sophia would ultimately be a good fit to serve in healthcare, customer service, therapy and education. Sophia runs on artificially intelligent software that is constantly being trained in the lab, so her conversations are likely to get faster, Sophia's expressions are likely to have fewer errors, and she should answer increasingly complex questions with more accuracy. Recently, Sophia visited IIT, Mumbai during the TechFest.

EAT RIGHT, IMPROVE IMMUNITY, STAY HEALTHY

Dr. Sayyed Mateen

Our immune system is incredibly important. Very much like our own personal army, it guards our body against attacks from invaders (like bacteria, fungi, and viruses), defending against infections and several kinds of cancer. And it's smart, too, often "remembering" certain infections so it's ready for them the next time they try to attack. But just like any other body system, your immune system can deteriorate if you don't treat it well. Keep it functioning at its peak performance, so you can stay healthy, too, by following the following steps.

1. Eat Right

In theory, this one is pretty simple: Eat just enough of the right foods when you feel hungry. Unfortunately, this isn't as simple to put into practice. We're tempted by unhealthy options everywhere we turn, we eat for emotional reasons, or we don't even know what the "right" foods are. For those of us who struggle in this area, this may take some work. Avoid eating too much, which can lead to weight gain and harm the immune system. Research performed by scientists at the University of North Carolina at Chapel Hill School of Medicine has shown that obesity prevents the immune system from functioning properly, increasing its vulnerability to infection. In the study, obese mice were found to be 50 percent less capable of killing the flu virus, compared to lean mice. The researchers believe that the same holds true in humans.

Just as important as how much you're eating, is what foods you're eating. Some nutrients and foods that have been found to enhance the immune system include:

- Vitamin C-rich foods, like citrus fruit and broccoli
- Vitamin E-rich foods, like nuts and whole grains
- Garlic
- Zinc-rich foods, like beans, turkey, crab, oysters, and beef
- Bioflavanoids, which are found in fruits and vegetables
- Selenium-rich foods, like chicken, whole grains, tuna, eggs, sunflower seeds, and brown rice
- Carotenoid-rich foods, like carrots and yams
- Omega-3 fatty acids, found in nuts, salmon, tuna, mackerel, flaxseed oil and hempseed oil.

Of course, you can find these nutrients in pill form, but food is always the best and most usable source of vitamins and minerals.

Nutritionist gives us the low-down on six immune-boosting foods.

1. **Lemons and other citrus fruit Citrus fruit** – including lemons, oranges and grapefruit – are rich in vitamin C which boosts your immune system.

   Why? - Vitamin C helps the body to produce white blood cells as well as antibodies – both keep the immune system fighting invading viruses.

2. **Eggs** - Not only are eggs a source of protein and iron, they also contain vitamin A – a fat-soluble vitamin which is important for the immune system. Liver, dairy products and oily fish are other sources of vitamin A.

   Why?- Vitamin A has important antioxidant properties and helps keep the cells which fight bacteria and viruses working at their best.

3. **Lean red meat Red meat-** It is well known as an incredible source of the mineral iron. The iron in red meat is called haem iron, which is a form that can be easily absorbed by the body. For those who include meat in their diets, two to three red meat meals a week is ideal.

   Why?- An adequate amount of iron is important to keep your body healthy and working at its best. Iron also helps to keep the immune system working at its best.

4. **Oats and other whole grains**- Oats and other whole grain cereals like wheat, rye, barley and brown rice provide important B vitamins such as vitamin B6, pantothenoic acid and folic acid. These vitamins support the immune system. Including whole grains every day can help supply the body with the B vitamins it needs as well as providing a valuable source of fiber and other nutrients needed for good health.

   Why? B vitamins can not only help the body fight off bacteria and viruses, but they can also help your immune system fight back when you are unwell. B vitamins are water soluble and can't be stored in the body. For this reason, aim to include whole grains every day.

5. **Seafood** Shellfish, including oysters, mussels and scallops, are great sources of zinc. Squid, prawns and other fish including salmon also have some zinc. (Lean red meat is another fantastic source; low-fat dairy products, whole grains, beans and nuts are other sources.)

Why?- Zinc helps ensure the white blood cells which help the body to fight infection are able to work at their best. Getting enough zinc through the diet can keep the body working at its best, but as with iron, too much can suppress the immune system – so food is the best way to get the zinc you need.

6. **Nuts** - Nuts not only have immune-boosting power from zinc, iron and the B vitamins, but also have the added value of being sources of other vitamins and minerals which support the immune system. All nuts are good and they have different benefits: Brazil nuts are rich in selenium; almond and peanuts are good sources of vitamin E. To get the best from nuts, choose a variety.

   Why?- The nutritional goodness in nuts helps support the immune system as a whole – they are a good addition to everyday eating

2. Exercise Regularly

According to the President's Council on Physical Fitness and Sports (PCPFS), data from numerous studies show that regular exercise reduces the number of sick days. In three separate studies cited in the June 2001 issue of the PCPFS' *Research Digest*, women who engaged in 35-45 minutes of brisk walking, five days a week, for 12-15 weeks experienced a reduced number of sick days compared to the control (sedentary) group. Exercise doesn't have to be strenuous to provide these benefits—in fact moderate exercise may even achieve a better result.

3. Get Enough Sleep

Deep sleep stimulates and energizes the immune system, while sleep deprivation has the opposite effect. According to authors of a sleep study published in 2001 in the journal *Seminars in Clinical Neuropsychiatry*, significant detrimental effects on immune functioning can be seen after a few days of total sleep deprivation or even several days of just partial sleep deprivation. According to the National Institutes of Health, the average adult needs between 7 and 8 hours a night, although some people may need as few as 5 hours or as many as 10 hours. To make sure you are getting enough quality sleep, avoid caffeinated drinks (and other stimulants), decongestants, tobacco and alcohol.

4. Manage Stress

Between fender benders, work deadlines, marital problems and hectic schedules, keeping stress out of your life is impossible. But how you choose to *react* to stress can greatly impact your overall health. **Sweeping problems under the rug as opposed to solving them can turn short-term stress into chronic stress, which can cause health problems.** According to the National Institutes of Health, hormones (like cortisol) that hang around during chronic stress can put us at risk for obesity, heart disease, cancer, and a variety of other illnesses. These stress hormones can work in two ways, either switching off disease-fighting white

blood cells or triggering a hyperactive immune system, which increases your risk of developing auto-immune diseases. So find ways to de-stress a few times per week, whether you exercise, practice yoga, meditate, or take a relaxing bath.

5. Quit Smoking

In an older but still relevant study published in the 1983 edition of the *Medical Journal of Australia*, immune system markers in 35 smokers were analyzed before they quit smoking and then again three months after they had quit. Compared with a control group who continued to smoke, the ex-smokers had significant, positive changes in many measurements of their immune systems. Smoking and using tobacco products contributes to a host of health problems, and this is one more you can add to your list for reasons to quit.