Key Indicator 3.5- Collaboration

<u>METRIC NO.</u>:-3.5.1.

Number of functional MoUs/linkages with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years

ACADEMIC YEAR 2019-20

S.N	Name of MOU/Linkage	Name of the institution / industry with whom the MoU / linkage is made, with contact details	Purpose of the MoU/Linkage (internship, on-the-job training, project work, student / faculty exchange and collaborative research)	Duration of MoU / linkage	List the actual activities under each MOU/ Linkage	Page No.
1	Academic MOU	Gurunanak College of Pharmacy, Nagpur	Collaborative research	5 years	i)Collaborative research and publication of research papers in journal with high impact factor ii) Participation of PJLCP faculty (S.K Shah) as resource person in GNCP for hands on training program on "Application of Computational Techniques in Drug Design and Development"	1-10
2	Academic MOU	Swargiya Dadasaheb Kalmegh Smruti Dental College & Hospital, Nagpur	Collaborative research	5 years	 i) Collaborative research and paper publication ii) Collaborative research in formulation development 	11-15
3	Academic MOU	Bhausaheb Mulak Ayurved Mahavidyalaya and Medical	Project work	5 years	Project Preclinical studies	16-19

		Science and Research Hospital,				
		Nagpur				
4	Industry linkage	Glenmark Pharmaceutical Private Limited, Mumbai	Project work	6 months	PG project training from 20/5/2019 for 6 months	20-21
5	Industry	Goa Antibiotic	Industrial	1 day	Field visit	22-24
	linkage	Pvt Ltd., Goa	training			

Sign of Principal



Priyadarshini J. l. College of Pharmacy, Nagpur, Maharashtra, India Certified Document from page No.1 to 24

MEMORANDUM OF UNDERSTANDING (MOU) FOR RESEARCH PARTNERSHIP AND COLLABORATION

Between

GURUNANAK COLLEGE OF PHARMACY,

Nagpur, Maharashtra, India

And

PRIYADARSHINI J L COLLEGE OF PHARMACY,

Nagpur, Maharashtra, India

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Brief introduction of both parties:

Under the aegis of **The Sikh Education Society**, Gurunanak Technical Institute (Diploma in Pharmacy) was established in the year of 1983. Gurunanak College of Pharmacy (GNCP) was established in 2004, in the subsequent year's postgraduate courses (2009) and PhD (2014) in the pharmaceutical sciences was introduced. The college is situated on 10 acres of land away from the hustle & bustle of busy city traffic, in the peaceful area of Nari which is very well within the Nagpur city limits. A spacious, well planned, well lit, well ventilated building surrounded by the lush green campus is many neighbors' envy. The college has been successful in imparting quality education in pharmacy at all levels throughout these years and it is also providing a well equipped platform to carry out the research activities that are recognized at both national and international levels.

The institute has robust infrastructure that caters to the needs of the students. This covers aspects of teaching-learning, extra-curricular activities, social outreach, sports, gender equality, cultural involvement and research accomplishments. The success stories of the institute highlight hard work by enriched faculty members and obviously our beloved students including strong alumni. There are about 23 full time teachers in the institute and most of them are PhDs. We are trying to carry out quality research work both in the basic research as well as in industry oriented research. The quality of our research can be judged by the quality of our publications and by the fact that our research is actively utilized in the industry.

AND

Priyadarshini J. L. College of Pharmacy (Degree), Formerly J. L. Chaturvedi College of Pharmacy (Degree) (JLCCOP) is one of the most renowned colleges of central India imparting quality education in Pharmaceutical Sciences. Established in the year 1997, the college offers undergraduate as well as post graduate courses in Pharmaceutics, Pharmaceutical Chemistry, Pharmacology, and Pharmacognosy.

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Ph.D. research centre for developing excellent research facilities for the benefit of the students and faculty. The institute has track record of research and development as evident from recent publications.

Both the institutes have agreed to enter into a Memorandum of Understanding (MOU) considering the long-term benefits of sharing the knowledge between the Institutes and establish a vibrant academic collaboration, by undertaking joint activities in their respective field of research,

2. Objectives and scope:

- This agreement ensures the collaborative research between GNCPand PLJCP in the field of Pharmaceutical Sciences.
- Both institutes will provide the required facilities to carry out the joint research activities without any financial expectations.
- In case of funded projects, government and non-government, sharing of financial resources will be decided based on the nature of activities to be performed in the project.
- Intellectual property of the product and the process through collaborative research will be equally held by both institutions and confidentiality of the research will be respected.
- In case of commercialization and patent filing of the product obtained out of this collaboration, both parties will consult before taking any financial decisions.
- Promotion of scientific aptitude in student through organization of joint scientific workshops and conferences.
- Student and faculty exchange programs where faculty or student of one institute will be invited to teach or share knowledge with the students and faculty of the other institute.

2.0 Executive responsibilities:

 Faculty of PJLCP will be performing research and administration through Principal.

- Faculty of GNCP will be responsible for taking decisions and execution of research activities through Principal.
- Responsible individuals of respective institutes will be joint investigators of the research projects.
- Due scientific weightage will be given to research involved in the research work for patents, publications, and commentaries.
- ٠

3.0 Confidentiality clause:

It is hereby agreed that both the Institutes shall keep information and data collected completely confidential, not to reveal without knowledge of both parties, for further development.

4.0 Publication policy:

With mutual consent of both institutions and due acknowledgement of contribution from individuals involved in scientific outcomes, research can be published.

5.0 Duration:

The MOU is valid for a period of five years from the date of signing. It can be extended with mutual consent of both the organization.

6.0 Termination:

- Either Institute is free to terminate the agreement by having mutual understanding and providing prior notice of 1 month.
- Any dispute, if arises must be resolved with mutual consultations
 between both institutes. Court of law shall be involved as a last resort
- to find solution for the cause of dispute.
 The legal arbitration must be performed at a place of mutual
 - understanding.

For,

Priyadarshini J L College of Pharmacy, Gurunanak College of Pharmacy,

Nagpur

12/03/2019

Principal,

Nagpur

Principal,

Priyadarshini J L College of Pharmacy, Gurunanak College of Pharmacy,

Nagpur, India R. chaple PRINCIPAL Priyadarshini J. L. College Pharmacy, Nagpur. Date of Sign and Acceptance:



Nagpur, India

Dr. A. M. Ittadwar Principal Gurunanak College of Pharmacy Nari, Near Dicit Nagar, Behind C. P. Found Kamptee Road, Nagpur-440 026





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Journal of Biomolecular Structure and Dynamics >

Volume 40, 2022 - Issue 12

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Research Articles

Prospecting for *Cressa cretica* **to treat COVID-19** via *in silico* **molecular docking models of the** SARS-CoV-2

Sapan Shah ∑ ⁽D), Dinesh Chaple, Sumit Arora ⁽D), Subhash Yende ⁽D), Chetan Mehta ⁽D) & Usha Nayak ⁽D)

Pages 5643-5652 | Received 29 May 2020, Accepted 02 Jan 2021, Published online: 15 Jan 2021

L Download citation Attps://doi.org/10.1080/07391102.2021.1872419



Sapan Shaha^{*} (), Dinesh Chaplea, Sumit Arorab (), Subhash Yendec (), Chetan Mehtad) & Usha Nayakd ()

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b Pharmacognosy and Phytochemistry Division, Gurunanak College of Pharmacy, Nagpur, Maharashtra, India

c Pharmacology Dvision, Gurunanak College of Pharmacy, Nagpur, Mahrashtra, India;

d Department of Pharmaceutics, Manipal College of Pharmaceutical Sciences, Manipal

ORIGINAL ARTICLE



Exploring the active constituents of *Oroxylum indicum* in intervention of novel coronavirus (COVID-19) based on molecular docking method

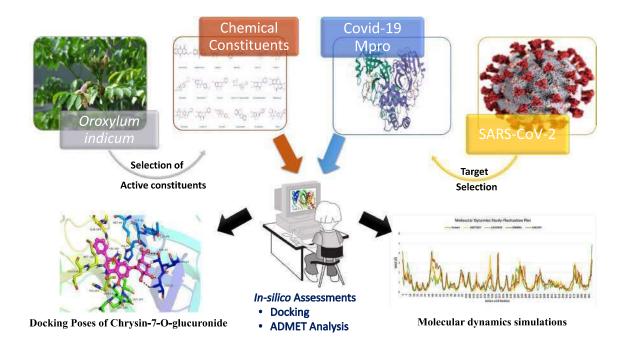
Sapan Shah¹ · Dinesh Chaple¹ · Sumit Arora² · Subhash Yende³ · Keshav Moharir⁴ · Govind Lohiya⁴

Received: 28 August 2020 / Revised: 24 November 2020 / Accepted: 15 December 2020 / Published online: 6 February 2021 © The Author(s), under exclusive licence to Springer-Verlag GmbH, AT part of Springer Nature 2021

Abstract

The severe acute respiratory syndrome COVID-19 declared a global pandemic by WHO has become the present wellbeing worry to the whole world. There is an emergent need to search for possible medications. We report in this study a molecular docking study of eighteen *Oroxylum indicum* molecules with the main protease (M^{pro}) responsible for the replication of SARS-CoV-2 virus. The outcome of their molecular simulation and ADMET properties reveal four potential inhibitors of the enzyme (Baicalein-7-*O*-diglucoside, Chrysin-7-*O*-glucuronide, Oroxindin and Scutellarein) with preference of ligand Chrysin-7-*O*-glucuronide that has the second highest binding energy (– 8.6 kcal/mol) and fully obeys the Lipinski's rule of five.

Graphical abstract



Keywords COVID-19 · Oroxylum indicum · Molecular docking · Molecular dynamics · ADMET study

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s1372 1-020-00279-y.

Sapan Shah shah.sapan@rediffmail.com

Extended author information available on the last page of the article





ISSN: 2455-0485

Ethnomedicinal and pharmacological potential of marine macroalgae for CNS disorders: An overview

Subhash R. Yende¹*, Radha Kapgate¹, Sumit K. Arora¹, Sapan K. Shah², Keshav S. Moharir¹, Ankit Mishra³

'Gurunanak College of Pharmacy, Nagpur-440026, Maharashtra, India, ²Priyadarshini J. L. College of Pharmacy, Hingna Road, Nagpur-440016, Maharashtra, India, ³VNS Faculty of Pharmacy, Neelbud, Bhopal-462044, Madhya Pradesh, India

Received: September 13, 2021 Revised: March 07, 2022 Accepted: March 08, 2022 Published: March 29, 2022

*Corresponding Author Subhash R. Yende E-mail: subhashyende@gmail.com

ABSTRACT

Marine macroalgae or seaweeds have created a favourable implication in the area of biomedical sciences, due to the present of potential bioactive substances. Extensive studies are reported on neuropharmacological effects of terrestrial plants and their constituents but there is inadequate information on the potential application of marine macroalgae for behavioural and neurological disorders. This review will emphasize on recent studies and/or updates on bioactive compounds or extracts from marine macroalgae and their potential toward CNS disorders.

KEYWORDS: Marine macroalgae, Seaweed, CNS disorders

INTRODUCTION

Most medicines are obtained from natural sources and researchers are still searching the tropical rainforest for potentially high-priced medicinal products. Many products of sea origin were used as food supplement since early 20th century, like cod liver and shark liver oil. It was only in early years of 1950s that researchers began to scientifically probe marine flora for medicines. Till now, around 10,000 bioactive compounds have been explored from marine sources. The quest still continues to discover new bioactive compounds from oceans (Colwell, 2002; Proksch *et al.*, 2002).

Marine plants involve marine algae, mangroves, sea grasses and sand dune plants. Almost 90 percent of marine plants are marine algae (Dhargalkar & Pereira, 2005). Marine algae are of two types, macroalgae (seaweeds) and microalgae. Marine macroalgae are found in the coastal area between high tide to low tide or in the subtidal region. Marine macroalgae are of three types: Green algae (Chlorophyta), Brown algae (Phaeophyta) and Red algae (Rhodophyta)(Garson, 1989; El Gamal, 2010). Green algae (Chlorophyta) found in the fresh as well as marine habitats. It contains chlorophyll a & b as photosynthetic pigments. The photosynthetic product of these algae is starch, with ulvan being the major polysaccharide component. Brown algae (Phaeophyta) are found only in marine habitat. Photosynthetic pigments of these algae are carotenoid, fucoxanthin (pigment responsible for brown colour), chlorophyll a & c, carotene and xanthophylls. The cell walls are made of cellulose and alginic acid. The photosynthesis of brown algae produced Laminarian, fucane and Manitol. Red algae (Rhodophyta) are exclusively marine (except for few species). Red algae contain phycoerythrin and phycothcyanin (pigment responsible for red colour), chlorophyll a and b-carotene. The primary polysaccharides of these algae are agars and carrageenans (Bold & Wynne, 1978).

The macroalgae are used for human consumption in China and Japan. The countries like Singapore, Malaysia, Thailand, Indonesia, Korea used marine macroalgae in soup, salad or jelly. Marine macroalgae are loaded with proteins, soluble dietary fibers, minerals, polyunsaturated fatty acids, vitamins, antioxidants and essential amino acids (Dhargalkar & Pereira, 2005). Extensive studies are reported on the therapeutic prospective of marine macoalgae toward various diseases. We have previously published a review paper on therapeutic potential of various *Sargassum* species and their health benefits (Yende *et al.*, 2014). In present review article, CNS potential of various marine macroalgae are explored.

CNS Potential of Marine Macroalgae

As per WHO report, out of approximately 450 million people suffering from a mental or behavioural disorder, small number of them receive basic treatment, this accounts for 12.3 percent of the global burden of disease and will increase to 15 percent by the year 2020 (Herrera-Ruiz *et al.*, 2006). From last few

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In silico prediction of phytoconstituents from Ehretia laevis targeting TNF- α in arthritis



Subhash R. Yende^a, Sapan K. Shah^{b*}, Sumit K. Arora^c, Keshav S. Moharir^d, Govind K. Lohiya^d

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b. Department of Pharmaceutical Chemistry, Priyadarshini J. L. College of Pharmacy, Nagpur, Maharashtra 440016, India

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A R T I C L E I N F O

Article history Received 12 March 2021 Accepted 01 August 2021 Available online 25 September 2021

Keywords Rheumatoid arthritis Ehretia laevis In silico Molecular docking Pharmacokinetics Tumor necrosis factor- α (TNF- α) Lupeol α -Amyrin

*Corresponding author: Sapan K. Shah, Assistant Professor. Research direction: natural product research and computational studies. E-mail: shah.sapan@rediffmail.com. Peer review under the responsibility of Hunan University of Chinese Medicine.

ABSTRACT

Objective Rheumatoid arthritis (RA) is an autoimmune disease involving the synovial lining of the major joints. Current therapies have noteworthy side effects. Our study involved *in silico* evaluation of *Ehretia laevis* (*E. laevis*) phytoconstituents targeting tumor necrosis factor- α (TNF- α).

Methods Molecular docking studies performed to investigate the binding pattern of the plant *E. laevis* phytoconstituents along with the crystal structure of TNF- α (PDB ID: 2AZ5) using Auto-Dock Vina followed by a study of interacting amino acid residues and their influence on the inhibitory potentials of the active constituents. Further the pharmacokinetic profile and toxicity screening carried out using SwissADME and pkCSM.

Results The docked results suggest that lupeol (– 9.4 kcal/mol) and α -amyrin (– 9.4 kcal/mol) has best affinity towards TNF- α compared to standard drug thalidomide (– 7.4 kcal/mol). The active chemical constituents represents better interaction with the conserved catalytic residues, leading to the inhibition/ blockade of the TNF- α -associated signaling pathway in RA. Furthermore, pharmacokinetics and toxicity parameters of these phytochemicals were within acceptable limits according to AD-MET studies.

Conclusion The binding potential of phytoconstituents targeting TNF- α showed promising results. Nonetheless, it encourages the traditional use of *E. laevis* and provides vital information on drug development and clinical treatment.

DOI: 10.1016/j.dcmed.2021.09.003

Citation: YENDE SR, SHAH SK, ARORA SK, et al. *In silico* prediction of phytoconstituents from *Ehretia laevis* targeting $TNF-\alpha$ in arthritis. Digital Chinese Medicine, 2021,4(3): 180–190.



The Sikh Education Society's Gurunanak College of Pharmacy, Nagpur One week hands on training program on

> Application of Computational Techniques in Drug Design and Development

Certificate of Appreciation

This certificate is proudly presented to Sapan Kamleshkumar Shah in recognition of your contribution for conducting one week hands on training program on "Application of Computational Techniques in Drug Design and Development" as a Resource Person & Trainer from 18th to 23rd October 2021.

Dr. A. M. Ittadwar Principal

continator Dr. Nidhi P. Sapkal Professor

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MEMORANDUM OF UNDERSTANDING





is entered on 16 01 202 Between

Swargiya Dadasaheb Kalmegh Smruti Dental College & Hospital, Wanadongari Wadhamna Road, Hingna, Nagpur, Maharashtra 441 110 (M.S)

&

PRIYADARSHINI J. L. COLLEGE OF PHARMACY Electronics Zone Building, MIDC, Hingna Road, Nagpur, 440016 (M.S.)

Swargiya Dadasaheb Kalmegh Smruti Dental College & Hospital, Nagpur (Hereinafter referred to as SDKSDCH) is the premier Institute of Central India. Since its very Inception In 2006. It has untiringly toiled amongst the most backward regions and the least privileged to provide them the opportunity to become self-reliant It is located at Wanadongri on Hingna road situated in the outskirts of the Nagpur city.

PRIYADARSHINI J. L. COLLEGE OF PHARMACY, Nagpur (Herein after referred to as PJLCP) is a pioneer Pharmaceutical Institution recognized for imparting high quality education since its establishment in 1997. The college has proved itself in producing graduates, post graduates and conducting doctoral research in the field of Pharmacy with sound scientific and technical background. The college is NAAC accredited, recognized by AICTE, PCI and affiliated to RTM Nagpur University, Nagpur.

This MoU shall commence from the date of its signing and shall continue for a period of Five years from date of its signing, unless either party notify in writing to the other party of its intension to terminate. PJLCP and SDKSDCH recognize that they share common goals and are desirous to establish a cooperative agreement for mutual benefit.

The said agreement between PJLCP and SDKSDCH will be in the following areas:

1. Technical Training Programs (TTPs): TTPS helps to improve the knowledge & the skills of the individuals. An individual undergoing TTPS can benefit in multiple ways. He will be in a position to improve his productivity. This MoU's also envisages series of Technical Training Programs for the employees of SDKSDCH.

2. Industrial Testing & Use of Laboratories: It is an important area to collaborate for both PJLCP and SDKSDCH members and shall utilize the various Laboratories that are available with PJLCP. The equipment & faculty expertise could be used by the SDKSDCH for varied purpose on chargeable basis as on decided by PJLCP.

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3. Undertaking Need based Projects: The problems faced by an Institute/ Hospital undertaking are many viz. technical, biomedical, human, system & procedures. In this collaboration, the PJLCP will undertake Consultancy activities which will be need based. The activity will involve Problem Identification, Problem Definition, Data collection, Data Analysis, Problem solving by taking corrective actions. These projects would be undertaken in joint consultation and benefits will be shared suitably.

4. Institute Visit: It is an activity, where student community would like to experience the real life work situations. This MoU's will provide an opportunity to the students of PJLCP of different branches to visit the hospital research activities and vice versa.

5. Guest Faculty/Visiting Faculty: PJLCP will invite SDKSDCH experts to share their experience with students of PJLCP through Entrepreneurship Development Cell of various departments and vice-versa. These lectures would be organized on a mutually agreeable time & date. It is expected that SDKSDCH will depute the senior professors /doctors who are ready to share their experience with students of PJLCP.

6. Confidentiality: As part of this MoU's, either party will acquire or develop confidential and proprietary information concerning its dealings and methods of dealings. Both parties agree that such Confidential Matter is for the other party's exclusive benefit and that, either party will not directly or indirectly use or disclose any Confidential Matter, except for specified purpose. Receiving party shall use the Confidential Matter of the other party only to its employees, directors and advisors on a 'need to know' basis. Disclosing party does not give any warranty for accuracy or completeness of confidential matter. Upon the termination of this MoU's, either party will promptly return all confidential matters to the other party. The confidentiality obligations stated herein shall survive for two (2) years after termination of this MoU's. The obligations contained in this Clause shall not apply to information in the public domain or is received from a third party without restrictions or is developed independently or is in possession of the receiving party.

7. Presentation/Dissertation Evaluation: As a part of curriculum the students of PJLCP prepare dissertation/Presentation. SDKSDCH will support this activity of PJLCP by sharing technical data, Clinical Data and the necessary guidance to the students to make their dissertation/presentation technically perfect and unique.

8. Agreements for Research Collaboration: Each research collaboration undertaken by the parties hereunder shall be initiated by the signing of a separate research agreement between the parties, which will describe in detail:

- The nature, scope and schedule of the research collaboration.
- b. In the form of the research collaboration.
- c. The estimated cost of the research collaboration together with the amount of funding, if any, to be received from third parties.
- d. The treatment of intellectual property and data rights, including Patents, industrial design registration, copyrights and all other proprietary information (including innovations not patented designs, not registered etc.) which result from the research collaboration or



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property shall survive the termination of the agreement.

(c) Termination shall not affect the projects/assignments agreed to be undertaken by both the parties before such termination and both the parties should complete such projects/assignments as if this MoU's is in operation.

(d) On termination, the Partner Institute shall handover the data which were used for processing to Counterpart.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this memorandum of Understanding to be executed, effective as of the day and year first above written.

On behalf of On behalf of Swargiya Dadasaheb Kalmegh Smruti Dental PRIYADARSHINI J. L. COLLEGE OF PHARMACY Nagpur College & Hospital, Nagpur Then! D. S. Sarfrede By: By: Name: Dr. Dinesh R. chaple Dr. Digest Barfurde Degn Name: Title: Title: Principal Witness: 1. - Alger (Dr. Achish Lenjehn) 2. A. (Dr. Arun Sajjanar) Witness: 1. SS Jalchle (Dr. S.S. Bakhle) 2. Kppaly (Dr. Nen Kp. upadly)





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Comparison of Efficacy of Topical Curcumin Gel with Triamcinolone-hyaluronidase Gel Individually and in Combination in the Treatment of Oral Submucous Fibrosis

Ashish B Lanjekar¹, Rahul R Bhowate², Suparna Bakhle³, Abhay Narayane⁴, Vipul Pawar⁵, Ranjeet Gandagule⁶

ABSTRACT

Aim: To study the efficacy of topical curcumin mucoadhesive semisolid gel, triamcinolone acetonide/hyaluronidase mucoadhesive semisolid gel, and a combination of both in the treatment of oral submucous fibrosis (OSMF).

Materials and methods: One hundred and twenty patients diagnosed with OSMF were randomly divided into groups I, II, and III. Each patients in groups I, II, and III was given professionally prepared mucoadhesive semisolid gel of curcumin, a combination of triamcinolone acetonide and hyaluronidase mucoadhesive semisolid gel, and a combination of all three, respectively. Patients were instructed to apply the gel thrice daily for 6 weeks on buccal mucosa bilaterally using the tip of index finger. Three parameters were evaluated at the end of each week, namely, mouth opening, burning on visual analog scale (VAS), and the color of oral mucosa on the binary scale. The results were subjected to statistical analysis.

Results: It was observed that the group administered the three drug combinations achieved the greatest mouth opening (mean increase 4.05 mm) as compared to the other two groups. It was observed that triamcinolone and hyaluronidase group reported reduction in burning sensation on VAS (mean difference 6) as compared to the other two groups. It was observed that group III (1% curcumin, 1% hyaluronidase and 0.1% triamcinolone acetonide combined) drug therapy showed better change in mucosa color as compared to groups I (1% curcumin) and II. **Conclusion:** Thus, we can conclude that curcumin has a therapeutic effect on patients diagnosed with OSMF. Maximum utilization and enhanced drug delivery were achieved with the help of a combination other two active drugs, namely, triamcinolone and hyaluronidase.

Clinical significance: Curcumin role in the treatment of oral cancers and the precancer lesion is very promising.

Keywords: Hyaluronidase mucoadhesive semisolid gel, Oral submucous fibrosis, Topical curcumin mucoadhesive semisolid gel, Triamcinolone acetonide mucoadhesive semisolid gel.

The Journal of Contemporary Dental Practice (2020): 10.5005/jp-journals-10024-2726

INTRODUCTION

The tremendous industrialization and urbanization of the 21st century has raised the standard of life in the recent times. However, there has also been a steady increase in stress that a human has to cope. In this scenario, people fall for habits such as gutkha, tobacco, and betel nut chewing are of great relief. They not only are addictive but also can cause debilitating irreversible damage to the oral cavity, one of which is the oral submucous fibrosis (OSMF).

Oral submucous fibrosis is a debilitating condition causing an overall reduction in the quality of life due to its ability to cause problems with speech, swallowing, opening of the mouth as well as the chances of developing into a malignant lesion. In India, the overall prevalence rate of OSMF is estimated to be about 0.2–0.5% and varies from 0.2 to 2.3% in males and 1.2 to 4.57% in females.¹

The condition is characterized by a burning sensation of the oral mucosa, ulceration, pain, blanching of oral mucosa, reduced movement, depapillation of tongue, depigmentation of oral mucosa, progressive reduction in mouth opening (MO), and scarring of the mucous membrane. The atrophic mucous may often ulcerate subsequently leading to malignancy.²

A wide array of treatments both surgical and medicinal has been advocated, which were hypothesized and justified by many researchers and clinicians over decades. Medicinal treatments such as systemic administration of antioxidants, immune milk, interferon- γ (IFN- γ) and intralesional injection of enzymes, steroids, ¹Department of Oral Medicine and Radiology, Swargiya Dadasaheb Kalmegh Smruti Dental College, Nagpur, Maharashtra, India

²Department of Oral Medicine and Radiology, Sharad Pawar Dental College, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India

³Department of Pharmaceutic, Priyadarshini JL College of Pharmacy, Nagpur, Maharashtra, India

⁴Department of Prosthodontics and Crown and Bridge, Dr Hedgewar Smruti Rugna Seva Mandal Dental College and Hospital, Hingoli, Maharashtra, India

⁵Department of Oral Pathology, Dr Hedgewar Smruti Rugna Seva Mandal Dental College and Hospital, Washim, Maharashtra, India

⁶Department of Prosthodontics, Dr Hedgewar Smruti Rugna Seva Mandal Dental College and Hospital, Hingoli, Maharashtra, India

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How to cite this article: Lanjekar AB, Bhowate RR, Bakhle S, *et al.* Comparison of Efficacy of Topical Curcumin Gel with Triamcinolone-hyaluronidase Gel Individually and in Combination in the Treatment of Oral Submucous Fibrosis. J Contemp Dent Pract 2020;21(1):83–90.

Source of support: Nil Conflict of interest: None

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Swargiya Dadasaheb Kalmegh Smruti Dental College & Hospital

Wanadongri Road, Hingna, Nagpur - 441 110 Mob. No. : 7620221782 Fax No. : (07104) 280099 E-mail : dadasahebkalmeghdental@yahoo.com

To

The Head

Priyadarshini College of Pharmacy

Nagpur.

Subject: Request for making the spirulina formulation for my Ph.D scholar regarding.

Respected madam/ sir,

Myself Dr R. Sathawane, Professor and Head Dept of Oral Medicine and Radiology, SDK Dental College, Nagpur. My student Dr N Vijayalaxmi is a registered Ph.D. scholar under me. She is undertaking her thesis on the topic "Efficacy of Topical Spirulina in the Treatment of Oral Candidiasis ". For which she will require the spirulina formulation, so requesting Mrs Bhakale madam of Priyadarshini College of Pharmacy to help her make the preparation for conducting the study.

Kindly support us in smooth conduct and completion of the thesis work.

Thank you.

Solown 30/7/

A. ORAL DIAGNOSIS & RALIE FARGIYA DADASAHEB KALMEL MRUTI DENTAL COLLEGE & HOSP ANADONGRI MADOMAMANA RO

Date: 30/7/22

MEMORANDUM OF UNDERSTANDING (MOU)

Between

Bhausaheb Mulak Ayurved Mahavidyalaya & Medical

science & Research Hospital, Nagpur

And

Priyadarshini J. L. College of Pharmacy, Nagpur

For

Facilitating Collaborative Research & Development, Precilnical, Clinical Studies, and Institute -Institute Interaction for teaching and research

This memorandum of understanding is made on 18.03.2019 between Priyadarshini J. L. College of Pharmacy, Nagpur which TS represented by Principal as Party one and Bhausaheb Mulak Ayurved Mahavidyalaya & Medical science & Research Hospital, Nagpur represented by Principal as Party two.

,

The MOU between the two parties is to collaborate on areas of mutual interests. The parties are agreed for:

- a) Faculty programs between Party one Priyadarshini J. L. College of Pharmacy, Nagpur and Party two Bhausaheb Mulak Ayurved Mahavidyalaya & Medical science & Research Hospital, Nagpur for better academic interactions.
- b) Party one Priyadarshini J. L. College of Pharmacy, Nagpur and Party two Bhausaheb Mulak Ayurved Mahavidyalaya & Medical science & Research Hospital, Nagpur agrees to provide facilities to the students of both the institutes for research activities involving analytical studies, product development and preclinical and clinical studies.
- c) Party one and party two agrees to acknowledge the support received from one another and also will take care of Intellectual Property Rights if involved.
- Party one & party two will mutually provide the institutional infrastructure for conduction of any programs if required by to one another.
- e) This agreement is to be in effect at least for five years from the time of its endorsement by both the parties.
- f) The officials representing Priyadarshini J. L. College of Pharmacy, Nagpur and Bhausaheb Mulak Ayurved Mahavidyalaya & Medical science & Research Hospital, Nagpur are signing this MOU to achieve the mutual benefits.

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Signed for and on behalf of: Priyadarshini J. L. College of Pharmacy, Nagpur

16har 15/08/19

Designation: Principal (Party PRINCIPAL Privadarshini J.L. College of Pharmacy, Nagpur.

Witness: 34 (%) Name: Mrs. S.V Mangrulkar

Associates Prof. / Asstt. Prof. Privadarshimi J. L. College of Nappur Signed for and on behalf of: Bhausaheb Mulak Ayurved Mahavidyalaya & Medical science & Research Hospital, Nagpur

mental

Designation: Prificipal (Party Two)hausahob Mulak Ayurved Mahayi Oniza-Nagpur

Name: Dr. Rajendra Urade DR. RAJENDRA B. URADE Professor & H.O.D. Peptt. of Agadtantra & Vidhi Ayurved, B.M. Ayurved College, Nagpur-9. 2

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LOKMANYA TILAK JANKALYAN SHIKSHAN SANSTHA'S PRIYADARSHINI J.L.COLLEGE OF PHARMACY



(Formerly known as J. L. Chaturvedi College of Pharmacy) Electronics Zone Building, MIDC, Hingna Road, Nagpur - 440 016. (India) Tel. & Fax No. : +91-7104-242169, 246811 E-mail : jlccp_ngp@rediffmail.com, principal.jlccp@ltjss.net Website : www. jlccp.ltjss.net

ACCREDITED WITH GRADE B++ BY NAAC Ref: PJLCP/2020/6/49-1

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Date: 20/08/2020

To whomsoever it may concern

This is to certify that Vd. Anurag Satpute, student of Post Graduate in Agadtantra Department of Bhausaheb Mulak Ayurved Mahavidyalaya, Nagpur, has completed analytical and animal studies for his Post Graduate thesis work entitled 'In Vivo Study of Navneeyukta Meghnad Swaras As An Antidote of Gunja (Abrus precatorius) poisoning In Albino Mice' in Pharmacology laboratory of Priyadarshini J.L. College of Pharmacy, Nagpur under the supervision of Mrs. Shubhada V. Mangrulkar, Assistant Professor. Our institute is affiliated to RTM Nagpur University, Nagpur and registered for performing experimentation on animals by CPCSEA, New Delhi (Registration No. 648/PO/ERe/S/02/CPCSEA).

This certificate is issued on his own request.

hein (Dr. D. R. Chaple)

PRINGIBAL Priyadarshini J.L. College of Pharmacy, Nagpur.

LOKMANYA TILAK JANKALYAN SHIKSHAN SANSTHA Lokmanya Tilak Bhavan, Laxmi Nagar, Nagpur - 440022. Maharashtra. INDLA. Tel.: +91-712 2230665, 2245121. Fax No: +91-712 2221430. Website : www.lijs PI

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Date: 15.06.2020

ACCREDITED WITH GRADE B++ BY NAAC

PJLCP/2020/ 6105

To The Registrar, MUHS, Nashik.

Subject- No Objection Certificate.

Dear Sir,

Vd. Dinesh Shankar Sontakke student of Post Graduate in Agadtantra Department of Bhausaheb Mulak Ayurved Mahavidyalaya, Nagpur wants to perform Post Graduate thesis work on animal studies in our Priyadarshini J.L. College of Pharmacy, Nagpur. Our institute is affiliated to RTM Nagpur University, Nagpur and registered for performing experimentation on animals by CPCSEA, New Delhi (Registration No. 648/PO/ERe/S/02/CPCSEA). This institute has no objection in allowing him to carry out his animal studies in institute animal house/laboratories, subjected to approval of his protocol (Form B) by our Institutional Animal Ethical Committee (Registration No. 648/PO/ERe/S/02/CPCSEA). As soon as the protocols get approved by IAEC, it will be communicated to your office.

Thanking you.

Yours faithfully 2020 156

(Dr. D. R. Chaple) PRINCIPAL Priyadarshini J.L. College of Pharmacy, Nagpur.

LOKMANYA TILAK JANKALYAN SHIKSHAN SANSTHA Lokmanya Tilak Bhavan, Laxmi Nagar, Nagpur - 440022. Maharashtra. INDIA. Tel.: +91-712 2230665, 2245121. Fax No : +91-712 2221430. Website : www.lijss.net



Date - 15" May, 2019

To. The Principal Priyadarahani J.L. College of Pharmacy, Nagpur Campus

Subject: - Confirmation of Off-Campus Thesis - Ms. Asawari Navghare

Dear Dr. D.R. Chaple,

This is with reference to your letter dated 14th May, 2019 regarding the Off-Campus Thesis of Ms. Asawari Navghare towards the partial fulfillment of M.Pharm Course.

We would he pleased to have her for 6 month project in our Formulations Development Department commencing from 20th May, 2019

We would like to inform you that the company will not be liable to pay any monthly stipend to the student and all other arrangements will have to be made by the student herself.

Yours Faithfully,

For GLENMARK PHARMACEUTICALS LTD.

MANAGER - HUMAN RESOURCES

General Phermacesticals Lad-

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ACCREDITED WITH GRADE 8++ BY NAAC

Rot No PULCE 12018-1915793

Date 14/05/2019

To. HR Manager Glenmark Pharmaceuticals Ltd. Taloja. Navi Mumbai

Sub Regarding project work

Dear Sir / Madam,

Ms. Asawari D. Navghare is a bonafide student of our college studying in M. Pharm II Sem in academic session 2018-19. She wishes to complete her M.Pharm. project work in your company for a duration of six months. The institute permits her to pursue her project work in your company. She will be reporting in your company from Monday 20" May 2019.

Hoping for your grand co-operation.

Thanking You,

Yours faithfully,

(Dr. D. R. Chaple) Principal Prhysdambini J.L. College al Pharmacy, Nagpur.

Salute 14/6/19 (Dr. Mrs. S.S.Bakhle) **Research Guide**

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Date: 13/01/2020

Ref. No. : PJLCP/2019-20/ 60 42-1

To.

H. R. Manager

Goa Antibiotics and Pharmaceuticals ltd.,

Near Tuem Industrial Estate, Tuem, Pernem

Goa - 403512

Subject: Regarding the Industrial Visit for the students of M. Pharm.

'Priyadarshini J. L. College of Pharmacy' is the forerunner institute serving pharmacy profession in central india, running Graduate, Post graduate courses and approved Ph. D. Centre. The institute is affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur; approved by AICTE, PCI New Delhi and DTE Maharashtra state. Institute has recognized your participation in pharma market and anticipate your cooperation for / providing professional plateform to the eandidates from our institute as well as region. Institute is having magnificent infrastructure and equipped with all necessary facilities to update the knowledge of students and to make aware student with cutting edge technology. Our 12 young and enthusiastic pharmacist / pharmacy graduate of M. Pharma. along with 02 faculty members are geared up to occupy their position in your esteemed pharmaceutical organization for the Industrial visit.

Kindly permit and allow us, so that we can plan Industrial visit on dated 01st Feb. 2020. We will be highly thankful for your support and for your positive response.

Thanking you.

Assocification of the clarget. Prof. Privadarshim J. L. College of Pharmacy, Nagpur.

Dr. D. R. Chaple

PRINCIPAL Priyadarshim in College c Pharmacy, Nagpur.

Conned with LOKMANYA TILAK JANKALYAN SHIKSHAN SANSTHA Tokmanya Tilak Bhayan, Jaxmi Nagar, Nagpur - 440022. Maharashtra. INDIA. Tel.: +91-712 2230665, 2245121. Fax No : +91-712 2221430. Website : www.ltjss.net



Ref: GAPL/HR/2019-20/ 14구나

Date: 01st February, 2020.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, 14 students including faculty from **Priyadarshini J. L. College of Pharmacy, Nagpur** visited our Factory at Tuem, Pernem-Goa on 01st February, 2020 for Industrial visit purpose to fulfill their educational requirement of M. Pharm course.

We wish to all students for their bright future.

D.N. Shetty DVP (CQA & RA)-HR

गोवा एंटीवाधोटिका और जामांस्यूटिवन्स सिपिटेड (परालास सहप्रकेश सिपिटेड के मन्तुभी, पास कावार का उठा) हुएन इंबस्ट्रियन एस्टेट के निकट, हुएन पेनेंस, गोवा 403 512, पास ई-नेस : Info@gapigoa.com हुप्ताय :+91 832 2201415/417/256 फिल्मा :+91 832 2201415/417/256 फिल्मा :+91 832 2201415/

Goa Antibiotics & Pharmaceuticals Ltd. (Subsidiary of HLL Ulecare Ltd., A Government of India Enterprise) Near Tuem Industrial Estate, Tuem, Pernem, Goa 403 512, India Email: Info grapigua com Tel: +91 832 2201 416/417/256, Fax: +91 832 2201 278 23



LOKMANYA TILAK JANKALYAN SHIKSHAN SANSTHA'S PRIYADARSHINI J.L.COLLEGE OF PHARM ACY

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Ref. No. : PJLCP/2019-20/6042-2

Date: 13/01/2020

Sr.	No.	Student Name	Class	Gender	Age
8 1	1:	Dhanashree Wasu	M. Ph. 2 nd yr.	F	23
-	2.	Pranali Gajbhiye	M. Ph. 2 nd yr.	F	24
	3.	Vrushali Talmale	M. Ph. 1 st yr.	F	23
	4.	Bhavika Ramtekkar	M. Ph. 1 st yr.	F	23
	5.	Priyanka Bendle	M. Ph. 1 st yr.	F	24
1 1	6.	Harshita Suke	M. Ph. 1 st yr.	F	23
	7.	Kajal Thool	M. Ph. 1 st yr.	F	- 24
	8.	Samiksha Sondawale	M. Ph. 1 st yr.	F	23
	9.	Nikhil Thorane	M. Ph. 1 st yr.	М	24
	10.	Madhav Korde	M. Ph. 1 st yr.	М	24
	11.	Parag Lekurwade	M. Ph. 1 st yr.	М	23
	12.	Rohit Durge	M. Ph. 1 st yr.	М	24

List of students for Industrial Tour-2019-20

List of Teaching Faculties for Industrial Tour-2019-20

Sr. No.	- Name of the Teachers	Designation	Gender	Age
i I	Mr. Y. N. Gholse	In-charge	M	35
2.	Ms. M. A. Bhongade	Member	F	. 25

Dr. D. R. Chaple PrincipalINCIPAL Priyadarshini J.L. College of Pharmacy, Nagpur.

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