

ANNALS OF PHYTOMEDICINE
An International Journal

Print ISSN : 2278-9839

Online ISSN : 2393-9885

Thomson Reuters : Web of Science: **Emerging Sources Citation Index (ESCI)**

UGC : **AP is now included in the approved list of UGC Journals**

Link : <https://mjl.clarivate.com/home>

NAAS Rating (2023) : **Government of India: 5.95**

MedLine : **NLM-ID: 01695900 (Serial)**

Aims and Scope

Annals of Phytomedicine (AP), is an international, peer-reviewed scientific journal, dedicated to publishing cutting edge research in all areas of phytomedicine. It will publish significant and outstanding developments in all phases of phytomedicine, thus ensuring its scientific priority. The manuscripts intended for publication shall be rigorously refereed and selected on the basis of quality and originality of the work. The journal is aimed at publishing and disseminating the innovative findings in the field of pharmacognosy, phytopharmacology, phytotherapy, chemistry of natural products, phytopharmaceuticals, biological activity of plant extracts and isolated compounds, clinical studies of standardized phytopreparations, phytotoxicity and standardization of drugs and also other related aspects within a single publication.

ANNALS OF PHYTOMEDICINE: An International Journal
BOARD OF EDITORS

EDITOR-IN-CHIEF

Dr. Irfan Ali Khan : Former Director

Nawab Shah Alam Khan Center for Post Graduate Studies and Research, (Osmania University), Mallepally, Hyderabad, T.S., India
ukaaz@yahoo.com

MANAGING EDITOR

Dr. Atiya Khanum : Former Chairman

Dept. of Botany, Nawab Shah Alam Khan Center for Post Graduate Studies and Research, (Osmania University), Mallepally, Hyderabad, T.S., India
ukaaz@yahoo.com

EDITOR

Dr. Adnan A. Khan : Associate Professor and Medical Director

Division of Nephrology and Hypertension, Department of Medicine, University of California, San Diego, USA
khan.dr.adnan@gmail.com

ASSOCIATE EDITORS

Dr. Syed Ibrahim Rizvi : Professor

Department of Biochemistry, Allahabad Central University, Uttar Pradesh, India
sirizvi@gmail.com

Dr. Suaib Luqman : Senior Scientist

CIMAP, Lucknow, Uttar Pradesh, India
s.luqman@cimap.res.in

Dr. Narayan Prasad Yadav : Senior Scientist

CIMAP, Lucknow, Uttar Pradesh, India
npyadav@gmail.com

Dr. Kuntal Das : Professor

Krupanidhi College of Pharmacy, Bengaluru, Karnataka, India
drkkdsd@gmail.com

Dr. K. Nagaiah : Chief Scientist

IICT, Tarnaka, Hyderabad, T.S., India
nagaiah@iict.res.in

Dr. Rekha R. Warriar : Scientist-C

Inst. of Forest Genetics and Tree Breeding, RS Puram, Coimbatore, India
rekhawarrier@gmail.com

Dr. Sayeed Ahmed : Associate Professor

Hamdard University, New Delhi, India
sahmad_jh@yahoo.co.in

COORDINATING EDITORS

Dr. Kanti Bhooshan Pandey : Scientist

CSIR - C.S.M.C.R.I., Bhavnagar, Gujarat, India
kantibiochem@gmail.com

Dr. Afroz Alam : Associate Professor

Dept. of Bioscience and Biotech., Banasthali Vidyapith, Rajasthan, India
afrozalamsafvi@gmail.com

Dr. G. Thiribhuvanamala : Associate Professor

Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India
ragumala2000@gmail.com

Dr. M. Salman Khan : Associate Professor

Dept. of Biotechnology, Integral University, Lucknow, U.P, India
contactsckhan@gmail.com

Dr. Ahmad Ali : Assistant Professor

Dept. of Life Sciences, M.U., Mumbai, Maharashtra, India
ahmadali@mu.ac.in

Dr. Nupur Mehrotra : Assistant Professor

Dept. of Biochemistry, Mithibai College, Mumbai, Maharashtra, India
nupur.mehrotra@mithibai.ac.in

Dr. V.V. Asha : Scientist

Rajiv Gandhi Centre for Biotech., Thiruvananthapuram, Kerala, India
ashavv@rediffmail.com

EDITORIAL BOARD

Dr. Mohd Iqbal : Former Professor

Hamdard University, New Delhi, India
iqbalg5@yahoo.co.in

Dr. S.H. Ansari : Professor

Hamdard University, New Delhi, India
shansari@jamiyahamdard.ac.in; shansari189@rediffmail.com

Dr. Anake Kijjoo : Professor

Dept. of Chemistry, Universidade do Porto, Portugal
ankijjoo@icbas.up.pt

Dr. Vinay Sharma : Professor and Director

Amity Institute of Biotechnology, Amity University, Rajasthan, India
vinaysharma30@yahoo.co.uk

Dr. Jaya Prakash Rao : Professor

Dept. of Chemistry, Osmania University, Hyderabad, T.S., India
yjpr_19@yahoo.com

Dr. Alban Ibrahliu : Professor

Faculty of Agril. and Emt., Agricultural University of Tirana, Tirana, Albania
albanibrahiu@ubt.edu.al

Dr. Francesco Epifanco : Professor

Dept. of Pharmacy, University of Chieti-Pescara, Chieti Scalo (CH), Italy
francesco.epifano@unich.it

Dr. Mostafa Elachouri : Professor

Dept. of Biology, Mohammed 1 University, Oujda, Morocco
elachourimostafa@gmail.com

Dr. Koula Doukani : Professor

Faculty of Life Sciences, Ibn Khaldoun University, Tiaret, Algeria
kouladoukani@gmail.com

Dr. P.B. Kavi Kishor : Former Professor

Dept. of Genetics, Osmania University, Hyderabad, T.S., India
pbkavi@yahoo.com

Dr. Byoung Ryong Jeong : Professor

Dept. of Horticulture, G.N.U, Jinju, Republic of Korea
brjeong@gmail.com

Dr. S. Raisuddin : Professor

Hamdard University, New Delhi, India
sraisuddin@jamiyahamdard.ac.in

Dr. Jamila K. Adam : Professor

Dept. of Biomedical and Clinical Technology, D.U.T., Durban, S.A.
adamjk@dut.ac.za

Dr. Usha Mukundan : Professor and Former Principal

RJ College, Ghatkopar West, Mumbai, Maharashtra, India
umukundan@hotmail.com

Dr. Mujeeb Ur Rahman : Professor and Principal

MESCO Institute of Pharmacy, 402, Dhanaura Road, Amroha, U.P., India
mujeebhambarb@gmail.com

Dr. Hancianu Monica : Professor

Universitatea de Medicina si Farmacie Grigore T Popa Iasi, Romania
mhancionu@yahoo.com

Dr. K.V. Rao : Former Director and Professor

CPMB, Osmania Univeristy, Hyderabad, T. S., India
rao_kv1@rediffmail.com

Dr. Raman Dang : Professor and Former Registrar

DPSRU, New Delhi, India
raman.dang@gmail.com; dangraman2000@yahoo.co.in

Dr. Nabil Mohie Abdel-Hamid : Professor

Faculty of Pharmacy, Al-Farahidi University, Baghdad, Iraq
nabilmohie@yahoo.com

Dr. Anupama Koneru : Professor and Principal

M.J. College of Pharmacy, Hyderabad, T.S., India
anupamakoneru@hotmail.com

Dr. Asna Urooj : Professor

Dept. of Food Science and Nutrition, M.U., Karnataka, India
asnau321@gmail.com

Dr. Nafees Ahmad Khan : Professor

Dept. of Botany, A.M.U., Aligarh, Uttar Pradesh, India
naf9@lycos.com; na.khan.bt@amu.ac.in

Dr. Samiullah Khan : Professor

Dept. of Botany, A.M.U., Aligarh, Uttar Pradesh, India
khan_drsami@yahoo.co.in

Dr. Arvind Kumar Bhatt : Professor

Dept. of Biotechnolgy, Himachal Pradesh University, Shimla, H.P., India
bhtarvind@yahoo.com

Dr. Subas Chandra Parija : Professor

Ouat, Bhubaneswar, Odisha, India
profscparijaouat4691@gmail.com

Dr. A.N. Arun Kumar : Scientist-F

Tropical Forest Research Institute, Mandla Road, Jabalpur, M.P. India
anarunkumar@gmail.com

Dr. Lamia Hamrouni Bel Hadj Brahim : Professor

Laboratory of Forestry Resources, INRGREF, Ariana, Tunisia
lamia.hamrouni@gmail.com

Dr. Wamik Azmi : Professor

Dept. of Biotechnolgy, Himachal Pradesh University, Shimla, H.P., India
wamikazmi@rediffmail.com; wamikazmi@yahoo.com

Dr. Zahia Kabouche : Professor

Dept. of Chemistry, University Freres Mentouri-Constantine, Algeria
zahiakabouche@umc.edu.dz; zahiakabouche@gmail.com

Dr. Noureddine Djebli : Professor

Faculty of Natural Sciences, Abdelhamid IBN Badis University, Algeria
djebli_n@yahoo.fr

Dr. S.A. Azeez : Professor and Principal

Deccan College of Pharmacy, Hyderabad, T.S., India
azphar@gmail.com

Dr. Najmul Islam : Professor

JNU Medical College, A.M.U., Aligarh, Uttar Pradesh, India
najmulamu@gmail.com

Dr. N. Geetha : Professor

Bharathiar University, Coimbatore, Tamil Nadu, India
geethadrbio@gmail.com

Dr. B. Madhava Reddy : Professor and Principal

G. Pulla Reddy College of Pharmacy, Hyderabad, T.S., India
madhavareddyb@gmail.com

Dr. Bouamama Hafida : Professor

Dept. of Biology, Cadi Ayyad University, Marrakech, Morocco
bouamamahafida@gmail.com

Dr. Ngatu Nlandu Roger : Former Professor

Kochi University Medical School, Nankoku, Kochi, Japan
doc.rogerngatu@gmail.com

Dr. Archana Giri : Professor

Dept. of Biotechnology, JNTU-H, Hyderabad, T.S., India
archanagiriin@yahoo.co.in

Dr. Zora Dajic Stevanovic : Professor

Dept. of Agriculture, University of Belgrade, Belgrade, Republic of Serbia
dajic@agrif.bg.ac.rs

Dr. Dilfuza Jabborova : Senior Scientific Researcher

Uzbekistan Academy of Sciences, Tashkent, Uzbekistan
dilfuzajabborova@yahoo.com

Dr. Douglas S. A. Chaves : Associate Professor

Dept. de Ciências farmacêuticas, Universidade Federal Rural do Rio de Janeiro, Seropédica/Rio de Janeiro - Brasil. CEP 23897-000
gnosy.ufrj@gmail.com; chavesdsa@ufrj.br

Dr. Slim Slim : Associate Professor

School of Higher Education in Agriculture, Carthage University, Tunisia
slimbss@yahoo.fr

Dr. Vikneswaran Murugaiyah : Professor

School of Pharma. Sciences, Universiti Sains Malaysia, Penang, Malaysia
vicky@usm.my; vickyusm@gmail.com

Dr. Yuva Bellik : Associate Professor

Mohamed El Bachir El Ibrahimy University, Bordj Bou Arreridj, Algeria
y.bellik@univ-bba.dz

Dr. S.A. Farooq : Associate Professor

Dept. of Genetic Engineering and Biotechnology, SQU, Muscat, Oman
sfarook@squ.edu.om

Dr. Jackson Roberto Guedes da Silva Almeida : Associate Professor

Federal University of Vale do Sao Francisco (UNIVASF), Brazil
jackson.guedes@univasf.edu.br

Dr. Syed Mohiuddin : Associate Professor

M.J. College of Engineering and Technology, Hyderabad, T.S., India
mohiuddin_syed@yahoo.com

Dr. Hytham M. Ahmad : Associate Professor

Faculty of Pharmacy, Menoufia University, Cairo, Egypt
hmaahmed@yahoo.co.uk

Dr. Yamina Bouatrous : Associate Professor

Department of Natural Sciences and Life, Mohamed Khider University, Biskra, Algeria
bouatrousyamina@yahoo.fr

Dr. Mastura Binti Mohtar : Senior Scientist

Natural Products Division, FRIM, Kepong, Selangor Darul Ehsan, Malaysia
mastura@frim.gov.my

Dr. Getha Krishnasamy : Senior Scientist

Natural Products Division, FRIM, Kepong, Selangor Darul Ehsan, Malaysia
getha@frim.gov.my

Dr. Adnan Ahmad Khan : Associate Medical Director

Kidney and Pancreas Transplantation, UCSD, San Diego, CA, U.S.A
khan.dr.adnan@gmail.com

Dr. Andria Agusta : Associate Professor

The Indonesian Institute of Sciences, J1, Raya Bogor, Cibinog, Indonesia
andria.agusta@lipi.go.id

Dr. Marina Krivtsova : Associate Professor

Dept. of Genetics and Microbiology, UNU, Ukraine
maryna.krivcova@gmail.com

Dr. Sevgi Gezici : Associate Professor

Dept. of Molecular Biology, Unviersity of Kilis 7 Aralik, Kilis, Turkey
sevgigezici.00@gmail.com

Dr. T. D. Babu : Associate Professor

Amala Cancer Research Centre, Thrissur, Kerala, India
babutd@amalains.org; babutharakan@gmail.com

Dr. Ivan Salamon : Associate Professor

Dept. of Ecology, Presov University in Presov, Presov, Slovak Republic
ivan.salamon@gmail.com

Dr. Urvesh D. Patel : Associate Professor

College of Vet. Sci. and Animal Husbandry, JAU, Junagarh, Gujarat, India
urvesh1981@yahoo.com

Dr. S. Sumathi : Associate Professor

Dept. of Biochem., AIHSHEW (Deemed University), Coimbatore, India
sumii.venkat@gmail.com

Dr. T. Lakshmi : Associate Professor and Associate Dean

Saveetha Dental College, Saveetha University, Chennai, T.N., India
lakshmi@saveetha.com

Dr. Adil Farooq Wali : Assistant Professor

RAK College of Pharmaceutical Sciences, RAK Medical and Health Sciences University, Ras Al Khaimah, U.A.E.
farooq@rakmhsu.ac.ae; adil.farooq@gmail.com

Dr. Irfan Ahmad Ghazi : Assistant Professor

Dept. of Life Sciences, H.C.U., Hyderabad, T.S., India
drirfang@gmail.com

Dr. Jatin H. Patel : Assistant Professor

Dept. of Vet. Pharmacology and Toxicology, College of Vet. Sci. and A.H., Navsari Agricultural University, Navsari, Gujarat, India
drjatinvet@yahoo.co.in

Dr. Belkis Muca : Assistant Professor

Igdir University, Turkey
belkismuca@gmail.com

Dr. A. K. Abdussalam : Assistant Professor

Sir Syed College, Karimbam P.O., Taliparamba, Kannur, Kerala, India
salamkoduvally@gmail.com

Dr. Vesna Davidovic : Assistant Professor

Faculty of Agriculture, Institute of Animal Sciences, UB, Nemanjina, Serbia
vesnadavidovic@gmail.com

Dr. Yaowared Chulikhit : Assistant Professor

Faculty of Pharmaceutical Sciences, KU, Khonkaen, Thailand
yaowaredchulikhit@gmail.com

Dr. Souayah Naoufel : Assistant Professor

Dept. of Biology, Al-Ula Branch, Taibah University, Madina, Saudi Arabia
souayahnaoufel@yahoo.fr

Dr. Mohamed M. Elsutohy : Assistant Professor

Schulich School of Engineering, University of Calgary, Calgary, Canada
mohamed.elsutohy@ucalgary.ca

Dr. Nuttinee Teerakulkittipong : Lecturer

Faculty of Pharma. Sciences, Burapha University, Chonburi, Thailand
nuttinee@go.buu.ac.th

EDITORIAL ADVISORY BOARD**Professor Bibi Ameenah Firdous Gurib-Fakim**

Managing Director CEPHYR, BioPark Mauritius, Socoto Phoenixia, Phoenix, Mauritius
Her Excellency Professor Bibi Ameenah Firdous Gurib-Fakim,
Former President of Mauritius
aguribfakim@gmail.com

Padma Shri Dr. E. A. Siddiq

Former DDG (ICAR), New Delhi
Presently Honorary Director, Institute of Biotechnology, Professor Jayashankar Telangana State Agricultural University, Rajendra Nagar, Hyderabad, Telangana State, India
esasiddiq@gmail.com

Padma Shri Dr. P. Pushpangadan

Former Director, Tropical Botanic Garden and Research Institute, Thiruvananthapuram, Kerala, India
Presently Director General, Amity Institute for Herbal and Biotech Products Development, 3-Ravi Nagar, Peroorkada P.O., Thiruvananthapuram, Kerala, India
palpuprakulam@yahoo.co.in

Padma Shri Dr. Seyed E. Hasnain

Former V.C., Hyderabad Central University, Hyderabad, T.S, India
Former V.C., Hamdard University, New Delhi, India
Presently Professor IIT Delhi, Hauz Khas, New Delhi, India
sehiitd@gmail.com

Professor Habil Akos Mathe

President, International Council for Medicinal and Aromatic Plants
Department of Botany, Széchenyi University, Faculty of Agriculture and Food Science, Mosonmagyaróvár, Hungary
acatius2005@gmail.com

Professor K. Husnu Can Baser

Vice President, International Council for Medicinal and Aromatic Plants
Faculty of Pharmacy, Anadolu University, Eskisehir, Turkey
kemalhusnucan.baser@neu.edu.tr

Professor Asim Ali Khan

Central Council for Research in Unani Medicine (CCRUM), Ministry of AYUSH, Govt. of India, Janakpuri Institutional Area, Janakpuri, New Delhi-110058, India
asim.ccrum@gmail.com

Dr. G.N. Qazi

Former V.C., Hamdard University, New Delhi
Presently Director General, Institute of Medical Sciences, Jamia Hamdard, New Delhi, India
gnqazi@jamiahamdard.ac.in

Professor Kakhramon Davranov

Director, Institute of Microbiology of the Academy of Sciences of Uzbekistan, Tashkent, Uzbekistan
k.davranov@mail.ru

Dr. Ahmad Kamal

Former Outstanding Scientist, ICT, Hyderabad, Telangana State, India.
Former P.V.C., Hamdard University, New Delhi-110062, India
ahmedkamal@iict.res.in; ahmedkamal@iictnet.org

Dr. Rajesh Arora

Director-Life Sciences (T&A), Govt. of India, Ministry of Defence, DRDO, Room No. 342, DRDO Headquarters, Rajaji Marg, New Delhi, India
rajesharoratejas@gmail.com

Professor Nazim Sekeroglu

President of AMAPMED, Department of Medicinal and Aromatic Plants, Kils 7 Aralik University, Kils, Turkey
nsekeroglu@gmail.com

Professor Marina Spinu

Chancellor of Faculty of Veterinary Medicine, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romanian
marina.spinu@gmail.com

Professor Namrita Lall

NRF/DST Chair: Plant Health Products from IKS, Plant Sciences Complex, Office 3-39, Medicinal Plant Science (Department of Plant and Soil Science), University of Pretoria, Pretoria 0002, South Africa
namrita.lall@up.ac.za

Professor C. Manohara Chary

Emeritus Scientist, Department of Botany, Osmania University, Hyderabad, Telangana State, India
cmchary@gmail.com

ANNALS OF PHYTOMEDICINE
An International Journal

Print ISSN : 2278-9839

Online ISSN : 2393-9885

Thomson Reuters : Web of Science: **Emerging Sources Citation Index (ESCI)**

UGC : **AP is now included in the approved list of UGC Journals**

Link : <https://mj.clarivate.com/home>

NAAS Rating (2023) : **Government of India: 5.95**

MedLine : **NLM-ID: 01695900 (Serial)**

Abstracting and Indexing

Thomson Reuters: Web of Science, Chemical Abstract Services (CAS), International Scientific Indexing (ISI), Scientific Indexing Services (SIS), Cite Factor, Google Scholar, J-Gate, Research Gate, BINGO, Active Search Results (ASR), EFITA, Cite Seer, Yahoo Search, Indian Science Abstracts (ISA), Medicinal and Aromatic Plants Abstracts (MAPA), Indian Citation Index (ICI), IFSII, IIOR, ISRA - JIF, MSN, Journal Seek, AOL, ISEEK, Eurasian Scientific Journal Index (ESJI), ASK, DIIF, Dogpile, SciCentral, My Web Search, Infospace, COSMOS, Ayush Research Portal, Research Bib, Refseek, Genamics, Genamics Journal Seek, Yanolox, SAIIF, Anoox, JIF, Crossref, Infobase Index, Electronic Journal Library, Berlin-Germany, International Committee of Medical Journals Editors, Journal Quality Factor Reports, Biotechnology Department, Kerala University, India, Institute for Information Resources, Lucknow, India, MU Digital Library, Manipal, India, Pak Academic Search, Pakistan, OAJSE, Scholar steer, Root indexing, ICMJE, CMFRI, IJIF, Scholar Impact Factor, Base, OAJI, GIF, Journal Index.net, Omics International, DRJI, WZB-Germany, Scholarly Open Access-Scrubd, TIB-DRJI, International Society of Indexing (ISI), Jour Informatics, Quality Factor, World Share, Contenko, Duck Duck Go, Baidu, Bing.

A BIENNIAL RESEARCH JOURNAL OF PHYTOMEDICINE

Ethical policy

Annals of phytomedicine: An International Journal intend to publish articles on a broad range of topics in the field of pharmacognosy, phytopharmacology, phytotherapy, chemistry of natural product, phytopharmaceuticals, biological activity of plant extracts and isolated compounds, clinical studies of standardized phytopreparations, phytotoxicity and standardization of drugs. Its peer review process must ensure correct, accurate, standard and authenticity of the research as it is a vital importance in the development and dissemination of knowledge of science.

Submission of a manuscript to **Annals of Phytomedicine** implies that authors have certified that the scientific work described has neither been published nor is under consideration for publication anywhere else. It also implies that the content of the manuscript has been approved by all coauthors or otherwise by competent authority of the organization where the work was carried out.

Ethics to consider

Authors

Those who have made significant contribution to the article with its conception, writing, data collection, statistical analysis, interpretation and data reporting of the study. AP highly encourages the transparency about the contributions by authors.

Originality and plagiarism

It should be entirely first hand information, *i.e.*, authors are responsible and ensure that the written article is of their own work or own words. It must not be copy of others in any aspect. It should not be plagiarized. The author must be able to provide the raw data collected for the article study as and when asked.

Acknowledgement of sources

Proper acknowledgment of the work of others must always be given.

Redundancy

The work or the study carried must not be published multiple times with any other form, Work once submitted to current journal then it should not be submitted to other journals or any other sources in any other forms.

Conflict of interest and disclosure

The author or authors must declare any conflict of interest related with the article to be published before submitting and publishing the data or the study.

Errors or false reporting

The author or authors should be whole responsible for the published work; if at all any errors or mistake found with the study or in reporting the data. It is the author's obligation to promptly notify the journal editor or publisher and cooperate with the editor to retract or correct the paper.

Hazards and human or animal subjects

Statements of compliance are required if the study involves chemicals, procedures or equipment that have any unusual hazards inherent in their use, or if it involves the use of human or animal subjects.

Case details

Studies on volunteers or patients require ethical committee approval and informed consent, which should be documented in the submitted work.

Copyright

The corresponding author signs and accepts all responsibility on behalf of any and all coauthors. Transfer of copyright to Annals of Phytomedicine of Ukaaz Publications, becomes effective if and when the article is accepted for publication.

Publication and processing charges

All the papers submitted for publication in "Annals of Phytomedicine: An International Journal" will be charged (2023) Rs. 8,500/- per article (Original article : Pages 15-25) and Rs. 10,000/- per article (Review article: Pages 25-35) from India and the overseas articles US\$ 250/- per article. All the authors are advised to prepare the manuscript, typed in double space on one side of A4 size white paper with 9 font size in Page Maker format/MS-Word, keeping proper margins on each side.

Payments are accepted only online transfer in favour of "**Annals of Phytomedicine-Ukaaz Publications**", payable at Hyderabad, Telangana State, India.

Account No.: 860020110000719

Swift code: BKIDINBBHMB

IFSC : BKID0008600

Bank : Bank of India, Abids Branch, Hyderabad, Telangana State

Instructions for preparation of manuscript is given on next page

We advise to prepare your manuscripts as per the format of our latest issue. Any enquiry relating to subscription should be sent to the **Managing Editor** for orders, claims, product enquiries and other related matters of the article.

All rights are reserved, no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means-electronic, mechanical, photocopying, recording, without the prior written permission of the publisher.

Copyright : Ukaaz Publications, Hyderabad, India

Publisher : Editor-in-Chief: Dr. Irfan Ali Khan

Circulation : Managing Editor: Dr. Atiya Khanum

Technical support : A. Rajkumar

Distribution : Managing Editor: Dr. Atiya Khanum

Editor-in-Chief : Dr. Irfan Ali Khan

Managing Editor : Dr. Atiya Khanum

Editor : Dr. Adnan A. Khan

Editorial Office : Hyderabad, India

16-11-511/D/408, Shalivahana Nagar,

Moosarambagh, Hyderabad-500036,

Telangana State, India

Editor-in-Chief : +91-09246509453

Managing Editor: +91-09246584140

E-mail : ukaaz@yahoo.com

Website : www.ukaazpublications.com

San Diego, USA

7281, Arroyo Grande Road, San Diego,

CA 92129, USA

khan.dr.adnan@gmail.com

Important note: While utmost care is taken in presenting accurate information, Annals of Phytomedicine assumes no responsibility for the statements, opinions, subject matter and also errors or omissions. All material published in Annals of Phytomedicine is covered under copyright. Unauthorized reproduction is prohibited.

Volume 12, Number 1, June 2023

Table of contents

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1>

Invited commentary

1. Pharmacological and phytochemical potential of wild fruits

N.S. Thakur

DOI: <http://dx.doi.org/10.54085/ap.2023.13.1.95>

Invited article

5. Fruits that heal: A natural boon to cure colon diseases

Sabbu Sangeeta, Gaurav Chandola, Preethi Ramachandran, Poonam Yadav and Sweta Rai

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.64>

Invited article

15. Vegetables that heal: The magic of red colour vegetables on breast cancer

K.P. Shamna and Muhammad Musthafa Poyil

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.34>

Review article

23. Scrutinizing glycyrrhizin and its derivatives in the management of respiratory disorders including SARS-CoV (Covid-19)

Arun Kumar, Juber Akhtar, Badruddeen, Mohammad Irfan Khan, Mohammad Ahmad and Navneet Verma

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.71>

31. A review on recent pharmacological screening models to evaluate Parkinson's disease

Harsha Ashtekar, Nimmy Varghese, Praneet Anigol, M.P. Muhammed Ameen, Steevan Dsouza, Sunny Sunwil Dsouza and Sujan Balkur

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.100>

39. Aphrodisiacs: A short review on naturally available sexual boosters

M. John Staines, S. Sengottuveluu, S. Haja Sherief and V. Lalitha

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.93>

51. Anti-inflammatory activity of *Ricinus communis* L.: A systematic review

Rahul R. Zade and Anita Wanjari

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.46>

59. An exploratory review of therapeutic efficacy of antitoxic formulation in Ayurveda

Sakshi Badre and Nilima Wadnerwar

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.42>

72. Niosomes : A promising novel drug delivery systems for phytoconstituents

N. Srinivasan and R. Murali

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.18>

79. Spirulina: A panacea for all human ailments

Divya Pingili, Archana Awasthi, Maryam Maqsood, K Sravya Devi, Patha Rasagna, Srinitha Bhagoji, Deepa N. Amminbavi and M. Bhagavan Raju

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.39>

93. Pomegranate (*Punica granatum* L.) seed: A review on nutritional profile, functional food properties, health benefits, and safety aspects

S. Yamini, Vinod Kumar Paswan, Abdelrazeq M. Shehata, Mahipal Choubey, Durga Shankar Bunkar and Vinay Venkatesh Varada

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.105>

-
105. Unveiling the potential: Colour enhancement and pharmaceutical properties of Crimson Seedless grapes
Shubham Temgire, Anis Ahmad Mirza, Abdul Waheed Wani, Kondle Ravi, Pratik Tanpure and Suprikesh Kadlag
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.86>
115. A review on comprehensive nutritional assessment and health importance of Papaya (*Carica papaya* L.)
Abhishek Timbadiya, Sury Pratap Singh and Bhuneshwari Rohilla
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.28>
124. Phytochemical and biological studies of *Solanum torvum* L. in folklore medicine of Assam
Sahil Hussain, Arun Kumar, Kuldeep Singh, Shom Prakash Kushwaha, Muhammad Arif and Mohd. Mursal
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.40>
132. A review on nutritional, phytochemical, and medicinal properties of underexploited fruit crops
T. Pavan Kumar Reddy, Ravi Kondle, Pavan Kumar Challa, and Abdul Waheed Wani
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.61>
148. Arabic/Acacia gum: Intensify the physiological life and postharvest quality of different horticultural crops
Preshit Sharma, Amit Kotiyal and Joshi Thoudam
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.59>
160. A review on recent scenario of herbal cosmetics
Sunita N. Vaidya, Surendra Agrawal, Umesh B. Telrandhe and Awdhut Pimpale
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.17>
171. Applications of nanomaterials in biomedical science
Atharva Yatin Naik and Priya Sundarajan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.54>
180. Nanoemulsion: A futuristic approach to disease elimination for food safety
Ajay Saroha, Amit Kotiyal and Rupesh
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.50>
187. Nutritional benefits of herbs and spices to the human beings
Jyoti Rani, Payneet Kaur and Caresma Chuwa
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.88>
198. Benevolent role of spices in endodontic: A short review
Kinjal P. Patel, Dilsar Gohil, Sweta B. Besh and Rajesh A. Maheshwari
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.108>
203. Medicinal orchids: Traditional uses and recent advances
Diksha Choudhary, Vinay Kumar Mashkey, Etalesh Goutam, Mohita Shrivastava, Monisha Rawat, Amrita Kumari and Vishal Tripathi
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.4>
212. Regulatory control over chewable gels and current challenges
Surbhi Rai and Nitin Dubey
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.83>
220. A review on quinazoline containing compounds: Molecular docking and pharmacological activities
P. Indumathy, N. Pavan Kalyan, K.M.Vishnu, R. Arun Kumar, R. Yogeshwaran and Afroz Patan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.82>
230. Thiazole chalcones: Promising agents with diverse pharmacological properties
Afroz Patan and M. Vijey Aanandhi
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.5>
- Ayurveda : Case Study**
241. A case study on successful Ayurvedic management of infertility with habitual abortions
Aarati Patil, Reshma Rajan and Sufiya Siddique
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.103>
-

244. A case study on successful Ayurvedic management of infertility with low AMH and failed IVF

Aarati Patil, Reshma Rajan and Gauri More

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.89>

Siddha formulation

247. *In vitro* free radical scavenging activity of *Nandukkal Parpam*: A herbo-mineral Siddha formulation

Gayathri Gunalan, A. Durga, A. Archana and A. Rajendra Kumar

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.101>

Original Article

251. Interaction between anti-COVID compounds across spike protein subunits influences their inhibition potential

Medhat Farag, Aslam Pathan and Nawaf Aldoij

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.27>

259. Bioinformatics approach to identify molecular targets of chrysin against Alzheimer's disease

Sevgi Gezici and Nazim Sekeroglu

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.38>

269. Computational identification of bioactive compound with neuroprotective potential for the management of Alzheimer's disease by targeting AChE protein

Firdaus Jahan, Akanksha Sharma and Mohammad Hayatul Islam

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.2>

277. Epidemiological study of patients with vitiligo at nrium-sd: A population based study

Arzeena Jabeenu, Ahmed Minhajuddin, Sameena Yasmeen, Tahooria Tamkanat, Maria Nishath and Dania Dilshad

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.8>

285. Formulation and evaluation of hydrogel for topical drug delivery of *Zingiber officinale* Rosc. and *Withania somnifera* (L.) Dunal to increase the bioavailability of oils for the treatment of arthritis

Dheeraj Singh Attri, Arvind Rathour, Ram Kumar Ray and Vijay Kumar

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.25>

295. Elucidation of the molecular mode of action of selected flavonoids (Myricetin and Bergapten) on human breast cancer MDA-MB-231 cells

Anchal Trivedi, Aparna Misra and Snober S. Mir

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.68>

303. Evaluation of anticancer activity of novel pyrimidine aniline molecular hybrids: Synthesis and characterization

Swetha Devidi and M. Swamivel Manickam

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.13>

310. Synthesis and characterization of letrozole-loaded polymer based nanoparticulate formulations for treating breast cancer

Sandhya Rani Mandadi and Lankalapalli Srinivas

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.30>

318. Molecular docking, ADME analysis, and pharmacophore modelling of benzoxazole fused azetidinone derivatives as anti-breast cancer agents

Gupta Dheeraj, Pankaj Kumar, Kavita Apte, Harsha Ashtekar and Seshagiri R Dixit

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.37>

325. Isolation, characterization and evaluation of antioxidant and anticancer activities from isolated components of *Ixora chinensis* Lam. flowers

Hemalatha Kamurthy, Sunitha Dontha, Sirajunisa Talath and H. M. Suresh

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.57>

335. *Houttuynia cordata* Thumb. extract for the treatment of triple negative breast cancer

Neha Maheshwari and Mukesh Chandra Sharma

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.47>

343. Antiageing properties of *Plumeria pudica* Jacq. leaf extracts and development of antiageing cream for cosmetic applications

MD. Nadeem Bari, Mamoun A. Alfaki and Karukuvelraja

DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.36>

-
353. Efficacy of *Ipomoea staphylina* Roem and Schult. against dental and urinary infections
Lekha Kumar, F. Amjath Alikhan and Mouli Shankar
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.16>
360. Investigation of beneficial impact of *Eulophia herbacea* Lind. tubers extract as an immunomodulatory and adaptogenic agent
Snehal K. Bhavsar, Anil U. Tatiya, Saurabh Maru and Dhanshri S. Patil
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.24>
367. Characterisation of selenium nanoparticles and *Phyllanthus niruri* Hook. f. selenium nanoparticles with histopathological investigation of their effects on cadmium-induced gastric toxicity in wistar rats
Sangita Kumari Pradhan, Santwana Palai, Jeevan Ranjan Dash, Ritun Patra, Pravas Ranjan Sahoo, Prakash Chandra Behera and Subash Chandra Parija
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.41>
376. Antiallergic activity of leaves of *Hibiscus mutabilis* L. in mast cell mediated allergy model
J. Pavithra, S. Haja Sherief, S. Sengottuvelu and V. Lalitha
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.78>
382. Antipsoriatic activity of imiquimod induced wistar model treated with cholecalciferol nanoemulsion with UV therapy
Mukul Sharma and Mukesh Chandra Sharma
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.85>
389. Preformulation and synthesis of retinol acetate nanoemulsion for skin disorder
Mukul Sharma and Mukesh Chandra Sharma
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.91>
400. Exploring antihypertensive effect of rutin through system based computational analysis
Monica Misra, Bhumika Chauhan, Rustam Ekbal, Sonia Yadav, Naveet kaur Gaurav and Yasheshwar
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.69>
407. Enteric coated microgranules of pantoprazole sodium in gastroesophageal reflux disease
Avani Gupta, Juber Akhtar, K.C. Rastogi, Badruddeen, Mohammad Irfan Khan, Mohammad Ahmad and Sanjay Kumar
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.97>
413. *In vitro* anthelmintic activity of *Passiflora foetida* L. hydroalcoholic and ethyl acetate extracts
Sudhakar Kommu, M. Chinnaeswaraiyah, P. Meghana, A. Leela, M. Sravani and SK. Moin Baba
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.99>
418. Fractionation and antidepressant activity of hydroalcoholic extract fraction of *Celosia cristata* L. leaves
Naveen Kumar Tripathi and, Neelam Khan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.67>
423. Evaluation of antimicrobial efficacy of mycoendophytic isolates from rice (*Oryza sativa* L.) crop
Anchal Tripathy, Debasis Dash and Chandni Charan Rath
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.9>
431. Antimicrobial activity of *Haldina cordifolia* (Roxb.) Ridsdale and *Thevetia peruviana* (Pers.) Schum. leaf extract against multidrug resistant microbes
Pragyandip P. Dash, Sushil Kumar, Anuradha Mishra and Sajal Srivastava
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.14>
440. Protective effects of diosmin in adenine-induced chronic kidney disease
Rayilla Deepthi and Ganta Suhasin
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.20>
446. Antibacterial activity of combined extract of *Salvadora persica* L. and *Zingiber officinale* Rosc. in comparison to their individual extracts on *Streptococcus mutans* as common oral pathogen
Imran Mohammad, Arun Kumar, Prawez Alam and Mohammed Sarosh Khan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.44>
453. Characterization and antibacterial response of biosynthesized silver nanoparticles using *Eclipta alba* (L.) Hassk. leaf extract
R. Anjali, Susan Kurian and Anjana Rajan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.58>
-

-
460. Antibacterial activity of green synthesized copper nanoparticles (CuNPs) on seafood spoiling biofilm producing bacterial pathogens
Haris Variyathody, Manohar Murugan, Malarvizhi Arthanari and Gobianand Kuppannan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.65>
467. Synthesis and docking study of aryl acetamide derivatives as an antimicrobial agents
C. Selvinthanuja, T. Prabha, T.L. Yogapprasath, N. Tamil Vanan, R. Vinoth Kumar, R. Ranjith and T. Sivakumar
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.94>
477. Phytochemical investigation and evaluation of the antioxidant, antibacterial and antifungal activities of *Stephania japonica* L. leaves extract
Korampalli Lakshmi Krishnarao and T. Raja Rajeswari
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.102>
486. Proximate composition, phytochemical analysis and antioxidant potency of *Trigonella foenum-graecum* L. seeds
Monika Moond, Sushila Singh, Seema Sangwan, Jyoti Rani, Anuradha Beniwal, Pinki Matoria, Kamaljeet Saini and Rajni Kant Sharma
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.98>
492. Effect of temperature and time on the antioxidant activity of fresh and dried persimmon pulp and seed extracts
Ruqaya Abdullah, Abida Jabeen, Ruhi Jan, Tawheed Amin, Mumtahn ul Kousar and Mifftha Yaseen
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.6>
502. Phytochemical analysis and antioxidant potential of *Albizia lebbek* (L.) seeds
Divya Devi, Sushila Singh, Monika Moond, Pinki Matoria, Sachin Kumari, Kamaljeet Saini and Rajni Kant Sharma
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.7>
508. Proximate composition, phenolic, flavanoid content and antioxidant potential of *Syzygium cumini* (L.) Skeels seed powder
Ritu Devi, Sushila Singh, Monika Moond, Rajita Beniwal, Sandeep Kumar*, Sachin Kumari and Rajni Kant Sharma
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.23>
514. Antioxidant, anti-inflammatory and anti-neurodegenerative activities of *Jatropha integerrima* Jacq. floral methanolic extract
Ayman Geddawy, Karukovelraja, K.P. Shamna and Muhammad Musthafa Poyil
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.32>
523. Phytochemical profile, antioxidant and cytotoxic activities of aquatic weed *Landoltia punctata* (G. Mey.) Les & D.J. Crawford
E. Sujatha and Meraj Fatima
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.33>
529. Phytochemical screening, antioxidant and anti-inflammatory activity of vulnerable tree species, *Diospyros candolleana* Wight
N. R. Anvitha, R. Vinuthashree and Shobha Jagannath
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.48>
538. Antifungal effects of plant essential oils against *Colletotrichum gloeosporioides*, the fungus associated with citrus twig blight
V. S. Pol, Y. V. Ingle and K. A. Lengare
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.12>
546. Proximate and mineral analysis of *Trigonella foenum-graecum* L. (Fenugreek) seeds and leaves of variety HM444
Monika Moond, Sushila Singh, Ritu Devi, Rajita Beniwal, Pinki Matoria, Sachin Kumari and Rajni Kant Sharma
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.10>
553. Bioinformatics approach for the AHS gene polymorphisms : An *in silico* analysis
Usha Adiga and Neha Martin Honnalli
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.11>
560. Validation of a new analytical method for the RP-HPLC quantitative analysis of recombinant human insulin
V. Nivetha and M. Vijey Aanandhi and R. Gandhimathi
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.75>
565. UV spectrophotometric stability indicating method development and validation for the estimation of 5-fluorouracil in the bulk
V. Padmabhushana Chary, Shaik Bushra, B. Vamshi, K. Saritha and M. Chinnaeswaraiiah
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.43>
-

573. Analytical method development and validation for the simultaneous estimation of lopinavir and ritonavir by RP-HPLC method in tablet dosage form
Akella Anuradha, M. Vijey Aanandhi and Afroz Patan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.45>
581. Study the effect of polymers on the release rate of propranolol hydrochloride from controlled release matrix tablets
Megha Tonk, Shabnam Ain, Babita Kumar and Qurratul Ain
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.51>
589. UV spectrophotometric method development and validation for estimation of furosemide in the bulk and tablets dosage form
V. Padmabushana Chary, G. Sushmitha, B. Mani, MD. Humera and M. Chinnaeswaraiiah
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.60>
595. Analytical method development and validation of rifaximin and ornidazole in bulk and combined tablet dosage form as per ICH guidelines
K. Subhamalar, M. Vijey Aanandhi and Afroz patan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.66>
601. Analysis of phytoconstituents and its phytoformulation of curcumin chewable tablet as per ICH guidelines
R. Raghavi and M. Vijey Aanandhi and M. Sumithra
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.70>
606. Estimation of biphasic isophane insulin 30/70 by using validated RP-HPLC technique
K. Varuni , M. Vijey Aanandhi and R. Gandhimathi
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.72>
611. Development and validation of analytical technique for the evaluation of insulin glargine by RP-HPLC
Dhritimoni Devi and M. Sumithra
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.73>
616. Analysis of second-generation anti histamine fexofenadine soft gelatin capsules and its related compound by using RP-HPLC
M. Vimal raj and M. Sumithra
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.80>
628. UV spectrophotometric method development and validation for the determination of metoprolol succinate in bulk and its pharmaceutical dosage form
K. Abhinaya, D. Shyamala, SD. Irfana, M. Pawan, G. Sahithi, A. Saikrishna and M. Chinnaeswaraiiah
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.107>
632. Synthesis and biological evaluation of some substituted pyrazolopyrimidines derivatives as potential α -glucosidase inhibitors
Mukesh Chandra Sharma
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.109>
638. Synthesis and biological evaluation of some substituted benzimidazole derivatives as antihypertensive activities
Mukesh Chandra Sharma and Dharm Veer Kohli
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.110>
648. Efficacy of pigmented rice and its bioactive compounds on the organoleptic assessment of functional ice cream during storage
Saloni, Dinesh Chandra Rai, Raj Kumar Duary and Subhadip Manik
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.90>
655. Development of nutritional millet based biscuits incorporated with amaranth seeds
Sushree Sangita Choudhury and Gitanjali Chaudhary
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.15>
665. Study on functional properties and health importance of Fenugreek (*Trigonella frenum-graecum* L.): A review
Neel Patel, Sury Pratap Singh and Vedika Thakur
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.21>
674. Effects of drying techniques on functional and physicochemical properties of *Chenopodium album* (L.) powder
Ram Krishna Yadav, Sunil Meena, Dinesh Chandra Rai, Priyae Brath Gautam and Arvind
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.22>
681. Effect of polyherbal sugar free syrup on dry cough in experimental animal models
Hardik Soni, Dimple Jain, Ankit Merai, Chirag Desai and Arindam Paul
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.35>
-

687. Effect of supplementation of different levels of phytogetic mixture on growth performance and carcass characteristics of broiler chickens
Pooja Singh, Neeraj, Ramesh Pandey and Amit Kumar Singh
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.49>
695. Effect of natural oil coatings and antiageing compounds on shelf-life and quality of Daisy mandarin under ambient storage conditions
Savan Sharma and Amit Kotiyal
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.56>
702. Process optimization of mango probiotic beverage
Sujata Karmakar, Arvind, Chhaya Goyal, Shikha Pandhi, Manish Kumar Singh and Anjali Kumari
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.63>
706. Application of spray-drying and freeze-drying for microencapsulation of lactic acid bacteria: A review
Kamalesh Kumar Meena, Neetu Kumra Taneja, Ankur Ojha and Sunil Meena
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.76>
717. Preparation and storability study of lime blended bael, *Aegle marmelos* (L.) Correa syrup under different storage conditions
Ashutosh Sudhir Dalal, Sandeep Kumar and Patel Shubh Jitendrabhai
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.106>
724. Phytochemistry and zinc oxide nanoparticles synthesized from ethanolic extract of *Euphorbia serpens* Kunth. and biomedical applications
L. Ravi Kantha Reddy and J. Venkateswara Rao
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.79>
736. Screening of coumarin derivatives as membrane integrity agonist using chem informatics approach
Sailakshmi, K. Sakshi Shetty, Royden Dsilva, Pratheek Sharma and Zeena Fernandes
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.84>
743. Simultaneous estimation using UV spectrophotometry of curcumin and silymarin in crude form and in prepared topical sunscreen cream
B. Chandrakala and M. Vidyavathi
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.81>
749. Pharmacognostic investigation and biological evaluation of *Allium sativum* L.
Priya Tiwari, Rajat Srivastava and Manoj Kumar Mishra
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.1>
756. *Chrysopogon nodulibarbis* (Hochst. ex Steud.) Henrard: A pharmacotherapeutical approach
S. Bakkiyaraj, Lekha Kumar and F. Amjath Alikhan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.26>
763. Phytochemical analysis of Pomegranate (*Punica granatum* L.) mesocarp and Cauliflower (*Brassica oleracea* L. var. *botrytis*) leaves
Sweta Kumari, Swarupa Chowdhary, Neha Nitin Pai, Khursheed Ahmed and Manali Parab
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.29>
776. *In vitro* investigation of minimum inhibitory concentration and minimum bacterial concentration from combined extract of *Salvadora persica* L. and *Zingiber officinale* Rosc. against *Streptococcus mutans*
Imran Mohammad, Arun Kumar, Prawez Alam and Mohammed Sarosh Khan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.53>
783. GC-MS analysis and isolation of few bioactive phytoconstituents from *Ixora parviflora* Lam.
A. Srivani and G. Krishna Mohan
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.77>
795. Assessment of biological activity of ethanolic leaf extract of *Zaleya decandra* L.
S. Sri Bhuvanewari, T. Prabha, S. Sameema Begum, K. Kammalakannan and T. Sivakumar
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.96>
801. Phytoremediation approach for uptake and accumulation of Hg in *Isachne globosa* (Thunb.) O. Kuntz to mitigate contamination around an industrial area
Chaithra Raviraj, C.S. Shastry, K. Rajisha and Gupta Dheeraj Rajesh
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.92>
808. Evaluation of natural edible coatings for enhancing the post-harvest quality and shelf life of guava (*Psidium guajava* L.) fruits
Kushagra Sharma, Kondle Ravi and Abdul Waheed Wani
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.62>
-

816. Effect of foliar micronutrients on the phytochemical composition of the Allahabad Safeda Guava
T. Pavan Kumar Reddy, Kondle Ravi and Pavan Kumar Challa
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.74>
821. Natural distribution of melliferous trees and shrubs in the Western Tien-Shan mountain ridge
J. Jurayev, M. Kholmurotov, K. Khalilova and D. Berdibaeva
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.31>
826. Formulation and storage study of leather prepared from litchi (*Litchi chinensis* Sonn.) fruit affected with pericarp browning using response surface methodology (RSM)
Sabbu Sangeeta, C.S. Chopra, Sweta Rai, Preethi Ramachandran and Hamid
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.3>
837. Effect of salt stress on the growth and survivability of different cultivars of strawberry (*Fragaria* spp.) under protected cultivation
Pranathi Gunda, Amit Kotiyal, Harshitha Gadampally and Aditi Thakur
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.52>
844. Assessment of bee flora and development of a floral calendar in relation to pharmaceutical potential of honey and bee pollen in Eastern Uttar Pradesh, India
Pratap A. Divekar, Kamana Singh, Chandan Kumar Verma, A. B. Rai, B. Singh, Shruti Yadav and Suhas G. Karkute
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.55>
856. Evaluation of physiological, enzymatic, biochemical, nutritional parameters and stress tests in wheat genotypes
Suvarna Gare, R. S. Wagh and A. U. Ingle
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.87>
865. Evaluation of different doses basis micronutrient and growth regulator against growth behaviours and yield perspective of oyster mushroom, *Pleurotus florida* (Mont.) Singer
Saurabh Kumar, Ram Chandra, Kishan Lal, Anoop Kumar and Vivek Kumar
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.104>
873. Homeopathic medicines as new strategy against plant pathogenic fungi
Dheer Kumar, Samir K. Biswas, Shivam Kumar, Girijesh Kumar Jaisval, Deepoo Singh, Ravi Kumar, Rahul Kumar Tiwari, Milan Kumar Lal and Ravinder Kumar
DOI: <http://dx.doi.org/10.54085/ap.2023.12.1.19>

[Author index and instructions for preparation of manuscript](#)

Cover photograph : [A review on recent pharmacological screening models to evaluate Parkinson's disease](#)
Harsha Ashtekar, Nimmy Varghese, Praneet Anigol, M.P. Muhammed Ameen, Steevan Dsouza, Sunny Sunwil Dsouza and Sujan Balkur