

Consolidated Report



INDIAN IMMUNOLOGY SOCIETY



Sponsored

INTERNATIONAL CONFERENCE

IMMUNFEST - 2023

Organized by

DEPARTMENT OF BIOTECHNOLOGY, SCHOOL OF ARTS AND SCIENCE

PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE AND TECHNOLOGY (PRIST)

DEEMED TO BE UNIVERSITY, THANJAVUR.

Venue:

PRIST Deemed to be University
Thanjavur.

Date:

28th April, 2023

Sponsors



E-mail - organics.know.what.u.eat@gmail.com
Contact - 84387 71308 Thanjavur



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Organizer

Dr. R. KAMARAJ

Department of Biotechnology

School of Arts and Science

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)

deemed to be University

Thanjavur, Tamilnadu



Indian Immunology Society

Estd.1972, Registered under the Indian Societies Act

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Letter Ref. No: IIS-2023/WID-07

Date: 15.04.2023

Dr. R. Kamaraj

Assistant Professor, Department of Biotechnology

**School of Arts and Science, Ponnaiyah Ramajayam Institute of Science and Technology
(PRIST Deemed to be University), Thanjavur, Tamil Nadu-613403**

Sub: -Celebration of International Day of Immunology-2023

Dear Dr./Prof. R. Kamaraj

With the immense pleasure, we would like to inform that your proposal for celebrating International Day of Immunology at **Department of Biotechnology School of Arts and Science, Ponnaiyah Ramajayam Institute of Science and Technology, Thanjavur, Tamil Nadu-613403** is accepted by the Executive Committee of Indian Immunology Society. Please go ahead and finalize the program. Indian Immunology Society agrees to reimburse a maximum amount of Rs. 10,000/- (Rs. Ten Thousand only) as a token grant for this program on successful submission of the Program Report, Pictures of the Event and Statement of Accounts, along with self-attested Original Bills on completion of the program (**please refer the complete check list attached**) (soft copy by email to iisexecutive2022@gmail.com; treasureriis2022@gmail.com) and hard copy to the address given below.

Mr. Manoj Kumar Sharma

Room No. 3030/3041-A

(Head Quarter, Indian Immunology Society)

Department of Biochemistry, All India Institute of Medical Sciences

Ansari Nagar, New Delhi-110029.

May we add that organisers and team members who are not IIS members, are encouraged to apply for life membership of the society to enable them for subsequent organisation of WID or CMEs and to avail other benefits during IMMUNOCONS.

[Organising secretary may kindly note following points while conducting the program.](#)

- The Organizers are advised to spend funds judiciously for encouraging the students' participation (awards/medals/certificates/refreshments etc.) in events rather than elaborate lunches/high tea etc.
- As far as possible the local resource persons should be invited to give talks to reduce the expenses on travel. In addition to this, honorarium are not be given to any resource persons however they may provide only travelling allowance (with bill).
- IIS will not be reimburse the expenses towards mementos/gifts for Speakers.

Thank You & Best Wishes for the program.

Sincerely,

Dr. Kaustuv Nayak

Treasurer, Indian Immunology Society

Dr. K. Balakrishnan

Secretary, Indian Immunology Society

*** All organisers are request to take prior permission from the institute before conducting IIS sponsored IDI meetings/events.**

IIS Headquarters: AIIMS, N. Delhi. Website: www.indianimmunologysociety.org Phone: +91-11-26594275

President's Office: ICMR-National Institute for Research in Reproductive and Child Health, Mumbai, India.

Phone: 022-24192049 Fax: +91-22-24139412 Cell: +91-9867197040 email: iisexecutive2022@gmail.com

Report on International Conference 'IMMUNFEST - 2023'

Introduction

Day of Immunology (DoI) was observed for the first time on April 29th, 2005 by the European Federation of Immunological Societies (EFIS). The foundation of the day was to fortify immunology as the root for the overall health and well-being of an individual among the public and scientific community.

Highlights

- The immune system is the key to the body's defense against infections
- To signify the importance of immunity, April 29th is marked as the International Day of Immunology with theme 'Immunology Talks to Public Health'
- The international day serves as a bridge between understanding the immune system and raising global awareness of immunology

About Indian Immunology Society (IIS)

- The Indian Immunology Society is a group of professors, scientists, and researchers with professional training from all over the world who are dedicated to advancing immunology and its related disciplines, encouraging the sharing of knowledge and information between researchers, and addressing the potential application of immunologic principles in clinical practice.
- The association supports its members by acting as a hub for the exchange of knowledge about the field and its practices, planning and sponsoring educational and professional opportunities, organizing and hosting scientific meetings, CMEs, addressing concerns and opinions raised by the membership, and addressing significant funding and policy challenges.

Proceedings

Outcome

The Department of Biotechnology, School of Arts and Science at Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) deemed to be University recently hosted an international conference called 'IMMUNFEST - 2023' in collaboration with the Indian Immunology Society to celebrate International Immunology Day on April 28, 2023.

A total of 860 participants registered for the event globally (Malaysia - 04; United States - 02; United Kingdom - 01; Kenya - 02; Iraq - 01; Egypt - 01; South Korea - 01; Nigeria - 01; Saudi Arabia - 01; Sri Lanka - 01; India - 845) of which 605 participants were from 26 States and Union Territories of India (Andhra Pradesh - 16; Andaman and Nicobar Islands - 01; Assam - 02; Bihar - 14; Chhattisgarh - 59; Delhi (NCT) - 06; Dadra and Nagar Haveli and Daman and Diu (UT) - 01; Gujarat - 11; Haryana - 13; Jammu & Kashmir (UT) - 08; Jharkhand - 03; Karnataka - 31; Kerala - 27; Madhya Pradesh - 15; Maharashtra - 61; Mizoram - 01; Nagaland - 01; Manipur - 01; Odisha - 04; Puducherry (UT) - 30; Punjab - 04; Rajasthan - 09; Tamil Nadu - 436; Telangana - 04; Uttarakhand - 02; Uttar Pradesh - 22; West Bengal - 18). Around 42.32 % participants from an Academic (Professor - 07; Associate Professor - 24; Assistant Professor - 265; Medical Doctor - 04; Scientist - 05; Other Faculties - 38; Nurse - 02; Research Scholar - 68) and remain, 57.68% Students (447).

The event was organized by Dr. R. Kamaraj, Assistant Professor, Department of Biotechnology with Dr. L. Chinnappa, Dean of Arts and Science serving as the Convener. Dr. T.V Christy, Hon. Vice-Chancellor, PRIST Deemed to be University, was the additional Chief Patron. The Conference had the privilege of the Hon. Chancellor, PRIST Deemed to be University, leading the event in his capacity as the Chief Patron.



Guests at the inauguration - IMMUNFEST 2023 (L-R: Dr. R. Kamaraj, Assistant Professor, Department of Biotechnology, Dr. Natarajan Gopalan, Head, Department of Epidemiology and Public Health, Tamil Nadu Central University, Dr. T.V Christy, Vice-Chancellor of PRIST University and Dr. L. Chinnappa, Dean of Arts and Science).



Resource Persons Dr. Natarajan Gopalan, Head of the Department of Epidemiology and Public Health at Tamil Nadu Central University, and Dr. Senthilnayagam, Nephrologist at SB Hospital in Thanjavur, interacted with our Vice-Chancellor (R).



A section of the attendees - IMMUNFEST 2023 - April 28, 2023.



A section of the participants - IMMUNFEST 2023 - April 28, 2023

The 'Conference Souvenir' and the 'Book of Abstracts' released prior to the conference sessions are sure to serve as a valuable resource for the attendees as reference during and after the various sessions.



Souvenir and Abstract release by the dignitaries – ImmunFest – 2023

Dr. TV Christy delivered the inaugural address, speaking about vaccination and immunity. His address, well-received by the academic attendees, helped raise awareness among participants on the Conference theme. Dr. Chinnappa delivered the keynote address. Dr. Natarajan Gopalan, Head, Department of Epidemiology and Public Health, Tamil Nadu Central University, Thiruvavur and Dr. Senthil Vinayagam, Nephrologist, SB Hospital, Thanjavur were present as special guests. Dr. Balakrishnan, Secretary, Indian Immunology Society (IIS) and Dr. D.S. Prabakaran, Post-Doctoral Researcher from Department of Radiation Oncology Chungbuk National University Hospital, Republic of Korea, participated online in the event as resource person.



Inaugural address given by Dr.T.V.Christy, Vice-Chancellor of PRIST, Keynote Address given by Dr. L. Chinnappa, Dean of Arts and Science, Plenary talk given by Dr. Natarajan Gopalan, Head, Department of Epidemiology and Public Health, Tamil Nadu Central University, Special Talk given by Dr. Senthilnayagam, Nephrologist , SB Hospital, Thanjavur, Dr. Balakrishnan, Secretary, Indian Immunology Society (IIS), and Dr. D.S. Prabakaran Post-Doctoral Researcher from Department of Radiation Oncology Chungbuk National University Hospital, Republic of Korea have participated in the event as resource persons and special guests.

- Dr. Natarajan Gopalan delivered a plenary talk on the impact of climate change on vector-borne diseases and immunology. He highlighted the fact that Global climate change might expand the distribution of vector-borne pathogens in both time and space, thereby exposing host populations to longer transmission seasons, and immunologically naïve populations to newly introduced pathogens. Where cool temperatures limit malaria parasite development, increases in temperature might enhance malaria transmission and viral replication and the length of the transmission season depend upon ambient temperature. Warm temperatures might intensify or extend the transmission season for dengue fever. Immunologists are working to examine this interplay between human immunocompetence and vector-borne disease risks in a warmer world. Vector-

borne diseases are human illnesses caused by parasites, viruses and bacteria that are transmitted by vectors. Every year there are more than 700,000 deaths happening from diseases such as malaria, dengue, schistosomiasis, human African trypanosomiasis, leishmaniasis, Chagas disease, yellow fever, Japanese encephalitis and onchocerciasis. The burden of these diseases is highest in tropical and subtropical areas. In the past the major outbreaks of dengue, malaria, chikungunya, yellow fever and Zika have afflicted populations, claimed lives, and overwhelmed health systems in many countries. Other diseases such as Chikungunya, leishmaniasis and lymphatic filariasis cause chronic suffering, life-long morbidity, disability and occasional stigmatisation.

- Dr. Senthilnayagam delivered an address on 'Autoimmune Kidney Diseases'. He explained that the immune tolerance refers to the ability of the immune system to recognize 'self' antigens and limit autoimmune responses against the 'self' antigens. This is achieved by both central and peripheral mechanisms. Central tolerance occurs in primary lymphoid organs namely bone marrow and thymus. Peripheral tolerance occurs in secondary lymphoid organs namely lymph nodes and spleen. Breakdown of these tolerance mechanisms results in autoimmune disease. Multiple factors play a role in the breakdown of immune tolerance and development of autoimmunity. These include genetic susceptibility, viral and bacterial infection, drugs etc. Autoimmune diseases can be organ specific or multisystemic. Kidney involvement may be due to a direct autoimmune attack or as a part of multi system auto immune disease or as collateral damage due to an immune attack on a different system. He explained about a disease in each of the above-mentioned categories which include Good pasture syndrome, Systemic lupus erythematosus and systemic vasculitis.
- Dr. D. S. Prabakaran gave a special talk regarding the role of radiation therapy in treating cervical cancer. According to him, the use of radiation therapy (RT) is a very effective method for treating a wide range of tumors, including cervical

cancer. The therapeutic implications of overcoming radiation resistance in the treatment of cancer are the biggest threat till date. Theirs, he said, are the only research group which identified the functional role of Fused Toes Homolog (FTS) in human cancers and documented the central role of FTS in numerous cellular signaling such as Epidermal growth factor receptor (EGFR), Epithelial Mesenchymal Transition (EMT) and Notch signaling. FTS is involved in conferring chemo and radio- resistance in human uterine cervical cancer and a prognostic marker. Further, silencing of FTS combined X-ray/C-ion/cisplatin combination targets the EGFR, Notch signaling in cervical cancer cells. Also, FTS silencing reduced the spheroid formation ability and cancer stem cells markers (Oct4A, Sox2, Nanog). Taken together, his research group's results suggest that FTS is involved in the regulation of X-ray and C-ion irradiation-induced Notch signaling and CSC activation and can be used as a target to increase radiosensitivity in cervical cancer.

- Dr. K. Balakrishnan gave a talk on HLA in Infectious Diseases. During the talk, he highlighted that HLA-class I and class II alleles are shown to be associated with several diseases such as tuberculosis, leprosy, diabetes, cervical cancer, rheumatoid arthritis, ankylosing spondylitis and a host of other diseases. Further, the HLA genes/ molecules are exploited as drug targets in treatment options for lymphomas. Shared epitopes of HLA molecules are well illustrated as diagnostic markers in autoimmune diseases and cancers. It is possible to predict vaccine candidates based on MHC-HLA-Peptide binding prediction analysis. For example, HLA-A2 is a predominant class I allele among all ethnic groups. Recent studies on Covid-19 revealed association of HLA-B*27:07, DRB1*15:01 and DQB1*06:02 alleles in Italian patients and DRB1*08:01 in Sardinian patients. Several previous studies established strong disease association HLA-DRB1*15:01 and DQB1*02 alleles with tuberculosis in a number of global populations. Similarly, a number of HLA Class- I alleles are shown to be associated with HIV-AIDS infections. Nonetheless, some studies established higher disease resolution

in HCV/HIV infections in individuals with HLA-A*03/-B*07 super-typic alleles. HLA- B*35- restricted escape mutants were shown to affect the recognition of CTLs by reducing both peptide binding and T cell receptor recognition and hence HLA- B*35 subtypes are associated with rapid HIV disease progression. HLA alleles, haplotype and extended haplotypes are important molecular targets for studies pertaining to population genetics, disease susceptibility studies donor screening in transplant programmes, therapeutics development and vaccine designing.

- The E poster presenter focused on discussions about COVID-19, vaccinations, and other infectious diseases. This prestigious event – IMMUNFEST 2023 – was quite informative, with many presenters sharing their research insights on several important topics.
- The conference, livestreamed, can be accessed on the YouTube link: <https://youtube.com/live/a47bDj6woNE?feature=share>



Dr. R. Kamaraj, Assistant Professor of Biotechnology, PRIST and Organizing Secretary - IMMUNFEST 2023, honouring Dr. T.V. Christy, Vice-Chancellor of PRIST Deemed to be University.



Dr. R. Kamaraj, Assistant Professor of Biotechnology, PRIST and Organizing Secretary IMMUNFEST 2023, honouring Dr.L. Chinnappa, Dean, School of Arts & Science, and Dr. J. Ilamathi, Head, Department of Biotechnology is on the right.



Dr. T.V. Christy, Vice-Chancellor, PRIST Deemed to be University, honouring Dr. Natarajan Gopalan, Head, Department of Epidemiology and Public Health, Tamil Nadu Central University.



Dr. L. Chinnappa, Dean, School of Arts & Science, honouring Dr. Senthilnayagam, Nephrologist, SB Hospital, Thanjavur.



Dr. L. Chinnappa, Dean, School of Arts & Science, honouring Dr. R. Kamaraj, Assistant Professor of Biotechnology, PRIST and Organizing Secretary IMMUNFEST 2023.



A group of the participants with the guests at the venue - IMMUNFEST 2023 -April 28, 2023



Some participants - IMMUNFEST 2023

It stood to be beneficial to memorize & update the 'INTERNATIONAL IMMUNOLOGY DAY'.

Programme Organizer
(Dr. R. KAMARAJ)

List of Participants (state-wise)

S.No	Name of the State	No. of Participants
1	Andhra Pradesh	16
2	Andaman and Nicobar Islands	01
3	Assam	03
4	Bihar	14
5	Chhattisgarh	59
6	Delhi (NCT)	06
7	Dadra and Nagar Haveli and Daman and Diu (UT)	01
8	Gujarat	11
9	Haryana	13
10	Jammu & Kashmir (UT)	08
11	Jharkhand	03
12	Karnataka	31
13	Kerala	27
14	Madhya Pradesh	15
15	Maharashtra	61
16	Mizoram	01
17	Nagaland	01
18	Odisha	04
19	Puducherry (UT)	30
20	Punjab	04
21	Rajasthan	09
22	Tamil Nadu	481
23	Telangana	04
24	Uttarakhand	02
25	Uttar Pradesh	22
26	West Bengal	18
	Total	845

List of Participants (country-wise)

S.No	Country Name	No. of Participants
1	United States	02
2	United Kingdom	01
3	Iraq	01
4	Egypt	01
5	Kenya	02
6	South Korea	01
7	Nigeria	01
8	Malaysia	04
9	Saudi Arabia	01
10	India	845
11	Sri Lanka	01
Total		860

List of Participants (academic-wise)

S. No	Designation	No. of Participants
1	Professor	07
2	Associate Professor	24
3	Assistant Professor	265
4	Medical Doctor	04
5	Scientist	05
6	Faculty	38
7	Nurse	02
8	Research Scholar	68
9	Student	447
Total		860



தஞ்சை

பிரிஸ்ட் பல்கலைக்கழகத்தில் சர்வதேச மாநாடு

தஞ்சாவூர், ஏப்.30- தஞ்சை பிரிஸ்ட் நிகழ்வுகள் நிறைவு பெறும் காலத்தில், இந்திய இம்யூனாலஜி சொசைட்டி செயல்பாட்டு செயல்பாட்டு சர்வதேச மாநாடு பாயோ டெக்னாலஜி துறை, கலை மற்றும் அறிவியல் துறை சார் பில் நடந்தது. இதில் 11 நாடுகளில் இருந்தும், 28 மாநிலங்களில் இருந்தும் பேராசிரியர்கள், மருத்துவர்கள், செவிலியர்கள், மாணவர்கள் உட்பட

80 பேர் கலந்துகொண்டனர். இந்த நிகழ்வின் அமைப்புச் செயலாளராக பேராசிரியர் கா.மராஜ் ஒருங்கிணைப்பாளராக கலை மற்றும் அறிவியல் துறை தலைவர் சின்னப்பா, கருத்து தலைமைப் பரவலராக பிரிஸ்ட் பல்கலைக்கழகத்தின் துணைவேந்தர் கிதில்டி ஆகியோர் இருந்து நிகழ்ச்சியை நடத்தினர். துணை வேந்தர் கிதில்டி நேய எதிர்ப்புகள் பற்றி பேசினார். பேராசிரியர்

சின்னப்பா தலைமை உரை யாற்றினார். சிறப்பு விருந்தினர்களாக இம்யூனாலஜி சொசைட்டி செயலாளர் பாலவிநுஷன், தமிழ்நாடு மந்திரி பல்கலைக்கழக தொற்று நோயியல், பொது சுகாதாரத் துறை தலைவர் நடராஜன் கோபாலன் தஞ்சை எஸ்.பி. ஆஸ்பத்திரி சிறுநீரக மருத்துவர் செந்தில் விநாயகம், கொரியாவின் ஜங்க் பக் பல்கலைக்கழக ஆராய்ச்சியாளர் பிரபாகர் ஆகியோர் கலந்து கொண்டனர்.

860 global delegates take part in 'Immunfest 2023'

DC CORRESPONDENT
THANJAVUR, MAY 3

A total of 860 delegates from all over the world, including countries like the US, the UK, Kenya, Egypt and Sri Lanka, participated in the international conference 'Immunfest 2023', organised here recently by the department of biotechnology, School of Arts and Science at Ponnaiah Ramajayam Institute of Science and Technology (PRIST) Deemed to be University, jointly with Indian Immunology Society.

Out of them, 605 participants were from various states in India, said a release issued here by the university on Wednesday.

Dr T.V. Christy, vice-chancellor of PRIST University, inaugurated the conference. He spoke about vaccination and immunity. Dr Natarajan Gopalan, head, department of infections pathology and public health, Tamil Nadu Central University, spoke on the impact of climate change on vector-borne diseases and immunology. He highlighted that global climate change might expand the distribution of vector-borne pathogens in both time and space, thereby exposing the host populations to longer transmission seasons. R. Kamaraj, assistant professor of department of bio-technology, PRIST, Dr L. Chinnappa, dean of arts and science, Dr Balakrishnan, secretary, Indian Immunology Society, (IIS), and Dr Senthil Vinayagam, nephrologist, SB hospital, Thanjavur also spoke.

The Hindu Ads

Institute Day
Maya Sreekumar, vice president, Cognizant Technology Solutions, spoke on the importance of understanding the functions of a business before joining an organisation at the Institute Day of Indian Institute of Information Technology - Tiruchi. She also inaugurated a seminar hall. A new student council took charge on Institute Day. Prize winners of competitions conducted throughout the academic year were felicitated, while junior students ceremonially bid farewell to their seniors.

Skills development
Dhanalakshmi Srinivasan Engineering College

campus.
Immunology Day observed
The Department of Biotechnology, School of Arts and Science at Ponnaiyah Ramajayam Institute of Science and Technology (PRIST), a deemed to be a University, hosted an international conference - 'IMMUNFEST - 2023' to mark the International Immunology Day. Around 850 participants participated in the event organised by the University in association with the Indian Immunology Society. A souvenir and an abstract carrying the concise summary of the topics discussed at the conference was released on the occasion.

Programme Schedule

Inaugural Function

Session - I

Plenary Talk : **Dr. Natarajan Gopalan, M.Sc., Ph.D.,**
Professor & Head
Department of Epidemiology and Public Health
Central University of Tamilnadu (CUTN),
Thiruvavur

TOPIC : "Climate change, Immunology and Vector Borne Diseases"

Special Talk - 1 : **Dr. Senthilnayagam, MD, DM.,**
Nephrologist
SB Hospital, Thanjavur, Tamil Nadu

TOPIC : "Autoimmune Kidney Disease"

Special Talk - 2 : **Dr. D.S. Prabakaran, Ph.D., (Medicine)**
Post-Doctoral Researcher
Department of Radiation Oncology
Chungbuk National University Hospital,
Republic of Korea
Visiting scientist at QST, Chiba, Japan.

TOPIC : "Role of Radiation Therapy (X-Ray & C-ion) in treating cervical cancer"

Special Talk - 3 : **Dr. K. Balakrishnan, M.Sc., M.Phil., Ph. D., B.L.,**
Professor & Head (Retired)
Department of Immunology, MKU
Secretary - Indian Immunology Society
Director- Madurai HLA Centre

TOPIC : "HLA in Infectious Diseases"

Session - II : Poster Presentation
"IMMUNOLOGY TALKS TO PUBLIC HEALTH"

Valedictory Function

CHIEF PATRON

Mr. M. Ponnaiah Nageshwaran, Chancellor, PRIST

ADDITIONAL CHIEF PATRON

Dr. T.V. Christy, Vice - Chancellor, PRIST

PATRONS

Dr. N.K. Mehra, INSA Vice President
Dr. Taruna Maadan Gupta, IIS President
Dr. K. Balakrishnan, IIS Secretary

CONVENOR

Dr. L. Chinnappa, Dean, School of Arts & Science, PRIST

ORGANIZING SECRETARY

Dr. R. Kamaraj, Assistant Professor, PRIST

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Dr. T. Veeramani
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Dr. N. Mahalakshmi
Dr. T. Thirusevi
PG & UG Students

TECHNICAL COMMITTEE

Mr. K. Bharatharathinam
PA to Chancellor &
Administrative Officer
Mr. T. Sethuraman
System Admin
Mr. R. Senthil
IT Support and Web Designer

For Registration

Dr. R. KAMARAJ, M.Sc., Ph.D.,
Assistant Professor
Department of Biotechnology
School of Arts & Science
PRIST Deemed to be University
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Mobile Number : 7373955155, 8667704282
Registration Link : <https://forms.gle/3Q2XioVnwoN1RnPu7>



SCAN QR CODE FOR
REGISTRATION

INDIAN IMMUNOLOGY SOCIETY

Sponsored

One Day International Conference on

IMMUNFEST - 2023

28th April 2023

Venue : PRIST Deemed to be University, Thanjavur.



Organized by

DEPARTMENT OF BIOTECHNOLOGY
SCHOOL OF ARTS AND SCIENCE



PONNAIYAH RAMAJAYAM INSTITUTE OF
SCIENCE & TECHNOLOGY (PRIST)
Declared as DEEMED TO BE UNIVERSITY
U/s of UGC Act, 1956
THANJAVUR, TAMILNADU.

ABOUT INTERNATIONAL DAY OF IMMUNOLOGY

The Day of Immunology (DoI) was established in 2005 by the European Federation of Immunological Societies (EFIS). Held for the first time on April 29th of that year, the purpose of DoI was to promote the importance of immunology and its role in maintaining the health and well-being of individuals. It was also meant to bring awareness to the public and scientific communities about the significance of immunology.

ABOUT THE INSTITUTION

The parent institute was founded in 1985 by Prof. Dr. P. Murugesan. It was conferred Deemed to be University status in 2008 by the University Grants Commission (UGC) under Section 3 of the UGC Act 1956. Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) is offering undergraduate, postgraduate, & doctoral programmes in Arts & Science, Agriculture, Commerce & Management, Engineering & Technology, Law and Pharmacy.

ABOUT THE DEPARTMENT

The Department of Biotechnology was established in 2008 in the Ponnaiyah Ramajayam Institute of Science and Technology (PRIST). It offers a two-year M.Sc Degree Programme and a three-year B.Sc Degree Programme in Biotechnology, as well as a Doctoral Programme leading to a Ph.D. in Biotechnology. The department is equipped with a hi-fi lab, ICT enabled classrooms, and advanced teaching methods to ensure the best possible learning experience.

About Indian Immunology Society (IIS)

The Indian Immunology Society is a group of professors, scientists, and researchers with professional training from all over the world who are dedicated to advancing immunology and its related disciplines, encouraging the sharing of knowledge and information between researchers, and addressing the potential application of immunologic principles in clinical practice.

The association supports its members by acting as a hub for the exchange of knowledge about the field and its practices, planning and sponsoring educational and professional opportunities, organizing and hosting scientific meetings, CMEs, addressing concerns and opinions raised by the membership, and addressing significant funding and policy challenges.

About IMMUNFEST - 2022

The Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) successfully organized a one-day conference on IMMUNFEST-2022 on the occasion of International Immunology Day. A total of 200 students participated in the event, including 12 faculty members from the field of Biological Sciences. The students presented scientific posters on appropriate themes: (i) Vaccinology, (ii) Autoimmune Disease, (iii) Infectious Disease, and (iv) Covid-19. The overall event was successful and admired in the university. It was beneficial to commemorate and update International Immunology Day.

About IMMUNFEST - 2023

The Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) and Indian Immunology Society (IIS) are proud to announce the upcoming one-day International conference, 'IMMUNFEST - 2023', in celebration of International Immunology Day. This conference will have the theme of 'IMMUNOLOGY TALKS TO PUBLIC HEALTH', and all faculty members, academicians, and students are invited to submit scientific poster presentations related to this theme. This promises to be an exciting event, and all those interested in immunology are encouraged to attend.

THEME

- ☛ Immunology of Infectious Diseases
- ☛ Vaccinology
- ☛ Molecular Epidemiology of Infectious Diseases
- ☛ HLA and Disease Associations and other related topics.

ABSTRACT SUBMISSION

Abstracts are invited for poster presentations. Best presentations will be conferred with cash prizes and certificates.

Poster Dimensions: 4 ft x 3 ft

Template for abstract submission

Title: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

(Times new Roman -font size 14, bold, line spacing: 1.5)

Authors Name(s) (Times new Roman -font size 12, bold, line spacing: 1.5)

Affiliation (Times new Roman -font size 12, italics, line spacing: 1.5)

Corresponding author e-mail:

Abstract: 200- 300 words (Times new Roman-font 12, line spacing: 1.5)

Keywords: e.g. Covid-19; Vaccine; Drug Development (4 to 6 Keywords)

Registration

No Registration Fee

Registration Link: <https://forms.gle/3Q2XioVnwoN1RnPu7>

SPONSORS





INDIAN IMMUNOLOGY SOCIETY

Sponsored
International Conference

IMMUNFEST - 2025

Organized by
Department of Biotechnology, School of Arts and Science,

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)

Deemed to be University, Thanjavur

28th APRIL, 2025

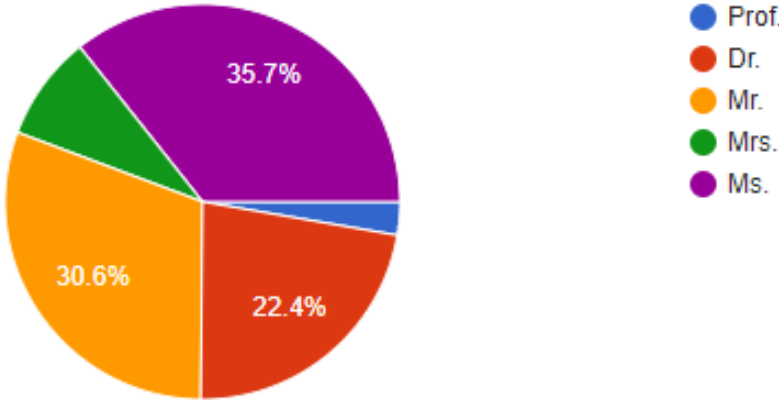
Agenda



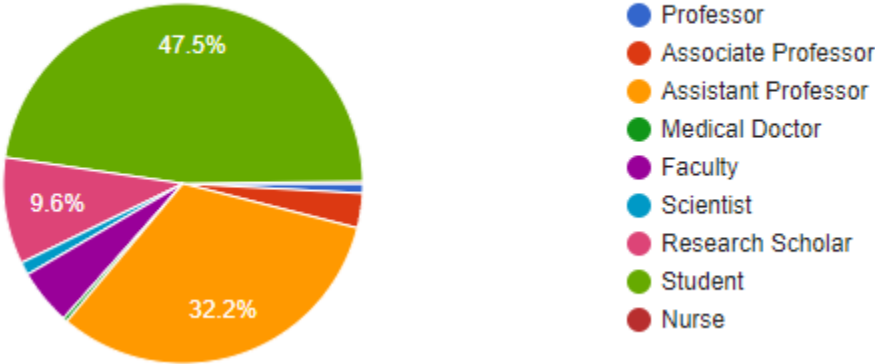
09.30 AM	Opening Ceremony	Opening Ceremony / Tamil Thai Valthu Founder hymn
09.40 AM	Lightning the lamp	
09.50 AM	Souvenir Release	
10.00 AM	Welcome Address	Ms. J. Swathi III B. Sc. Biochemistry PRIST University
10.10 AM	Keynote Address	Dr. L. Chinnappa Dean, School of arts and Science
10.20 AM	Inaugural Address	Dr. T. V. Christy Vice - Chancellor
10.30 AM	Tea break	
10.45 AM	Plenary talk	Dr. Natarajan Gopalan, M.Sc., Ph.D. Professor and Head Department of Epidemiology and Public Health, Central University of Tamilnadu (CUTN), Thiruvavur
11.30 AM	Special Talk 1	Dr. L. Senthilnayagam, MD., DM., NEPHROLOGIST SB Hospital, Thanjavur
12.00 PM	Special Talk 2	DR. D.S. Prabakaran, Ph.D., (Medicine) Post -Doctoral Researcher Department of Radiation Oncology Chungbuk National University Hospital, Republic of Korea Visiting scientist at QST, Chiba, Japan
12.45 PM	Special Talk 3	Dr. K. Balakrishnan, M.Sc, M.Phil., Ph. D., BL, Professor & Head (Retired) Department of Immunology, MKU Secretary-Indian Immunology Society Director Madurai FICA Centre
01.30 PM	Lunch	
02.30 PM	Poster Session	
04.30 PM	Vote of thanks	Mr. J. Gowri Sankar II M. Sc. Biotechnology PRIST University
04.35 PM	Valedictory	

REGISTRATION RESPONSES

Prefix

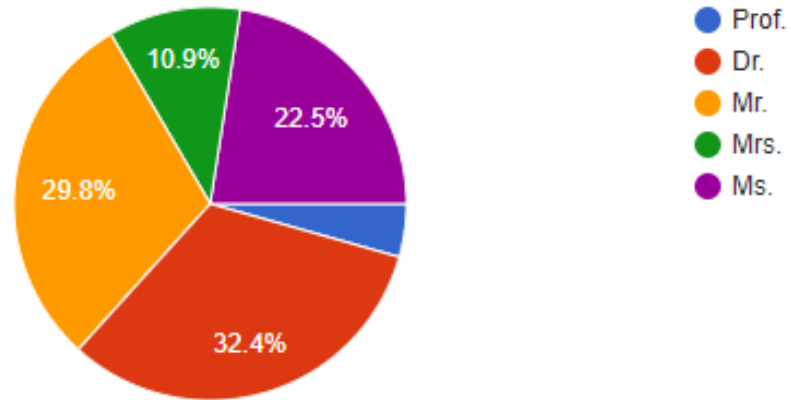


Designation

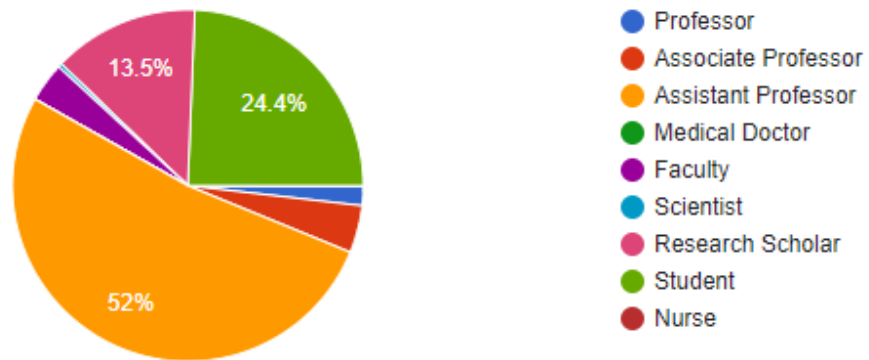


FEEDBACK RESPONSES

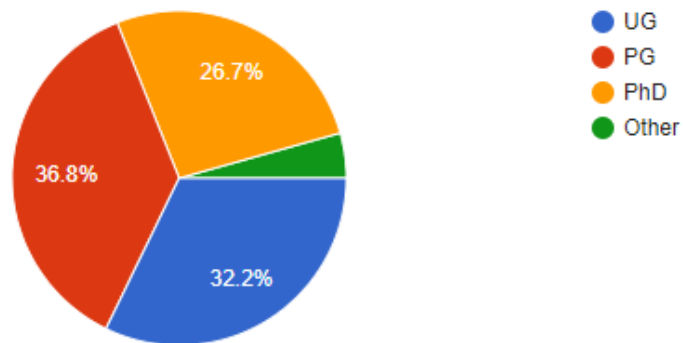
Prefix



Designation

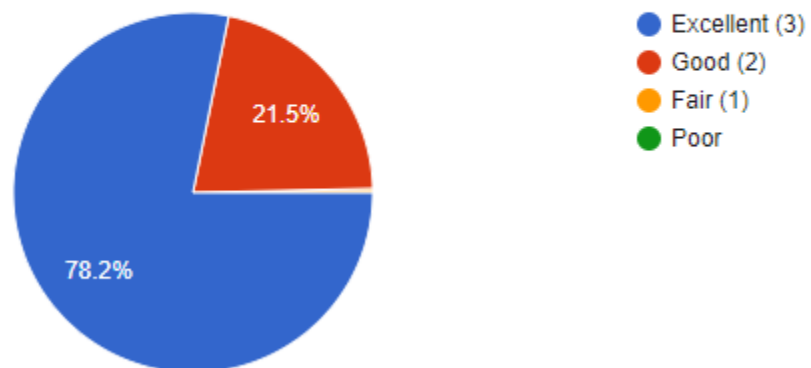


Qualification



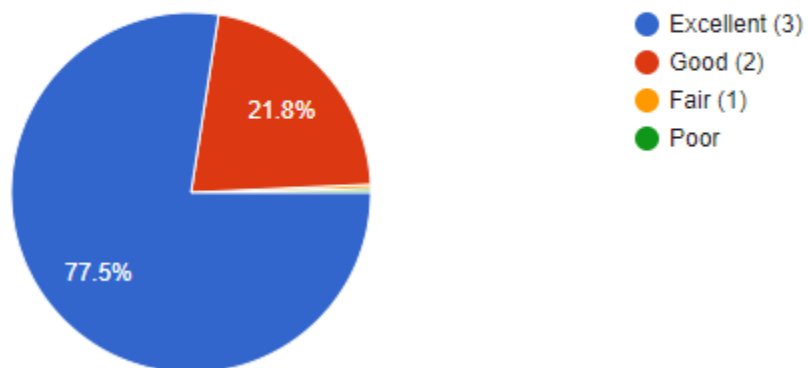
Rating for Dr. N. Natarajan Gopalan, M.Sc., Ph.D.,

275 responses



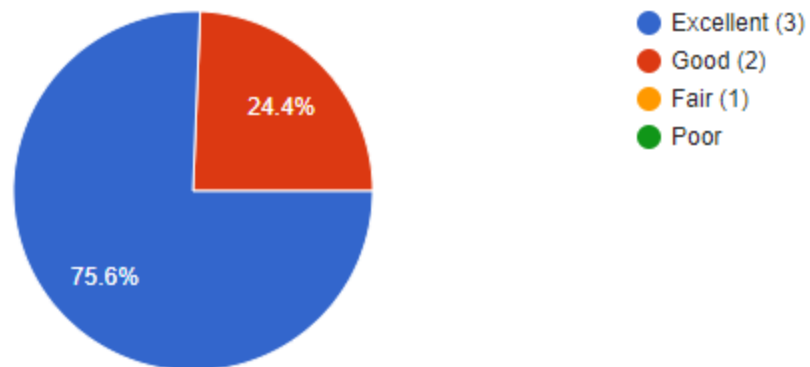
Rating for Dr. Senthilnayagam, MD., DM.,

275 responses



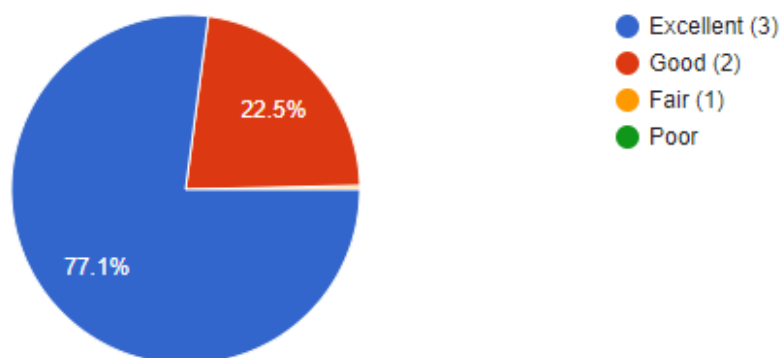
Rating for Dr. D.S. Prabakaran, Ph.D.,

275 responses



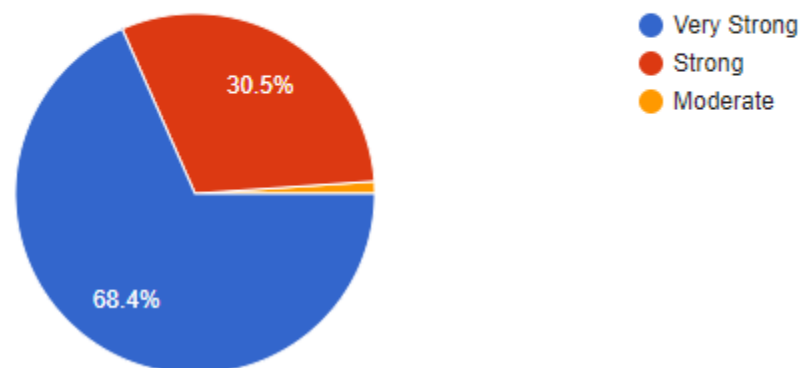
Rating for Dr. K. Balakrishnan, M.Sc., M.Phil., Ph. D., B.L.,

275 responses



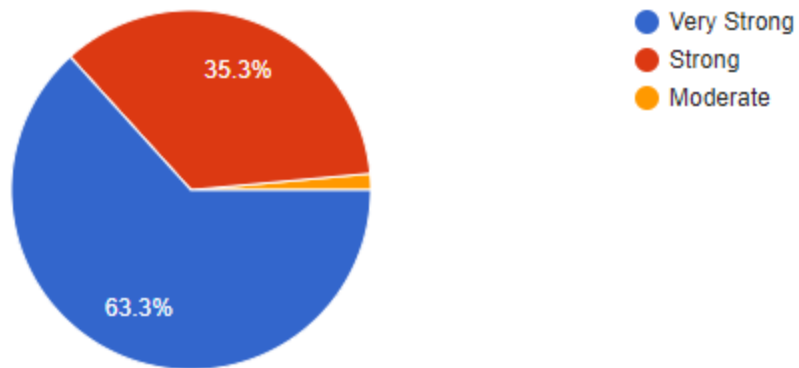
Scientific merit of the talk

275 responses



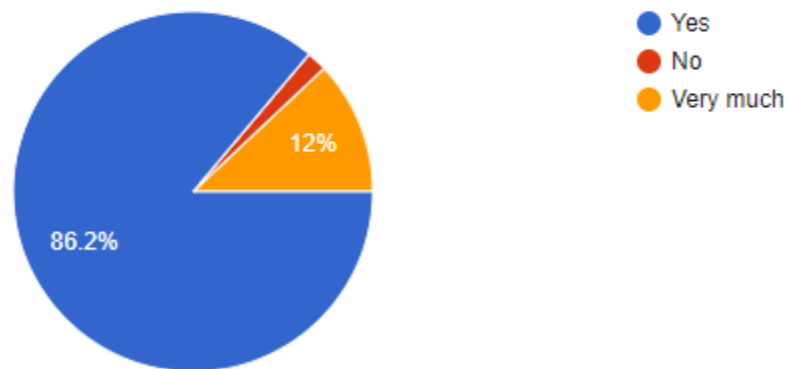
Technical / Technological merit of the subject content

275 responses



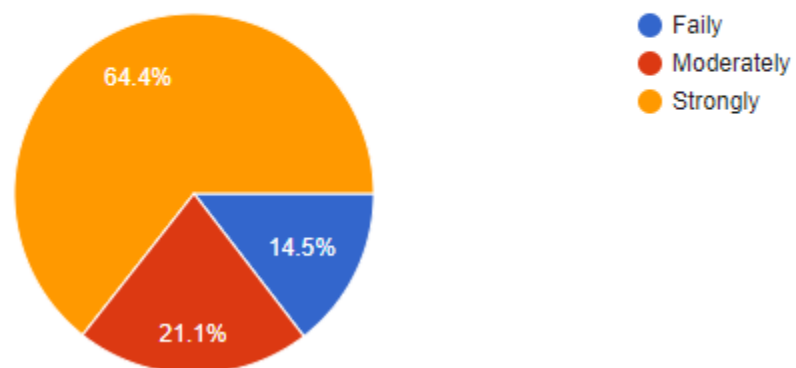
Is the speaker interactive ?

275 responses



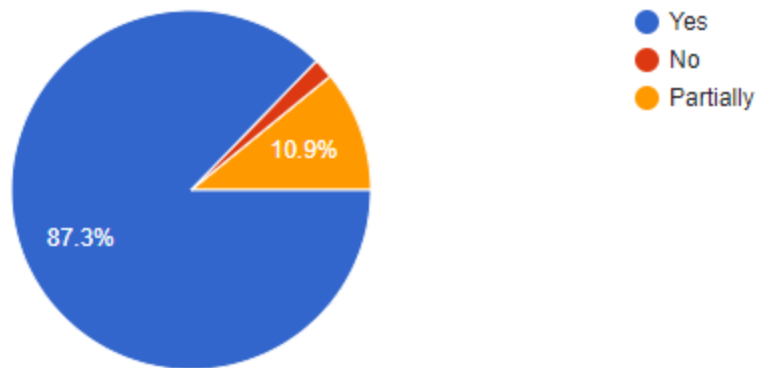
Is the topic useful in enriching your knowledge ?

275 responses



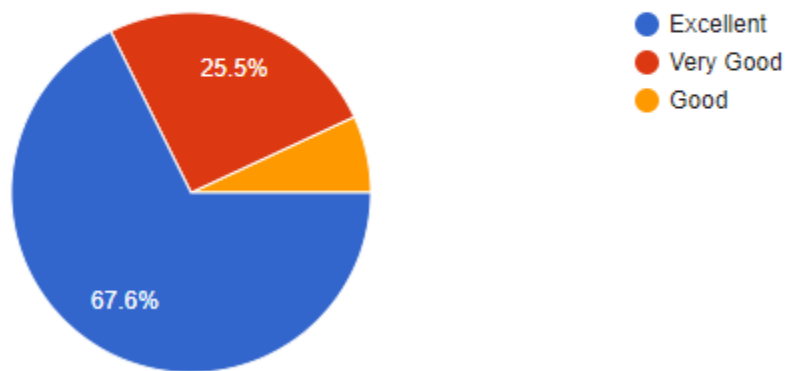
Is the speaker followed the timing of the session ?

275 responses



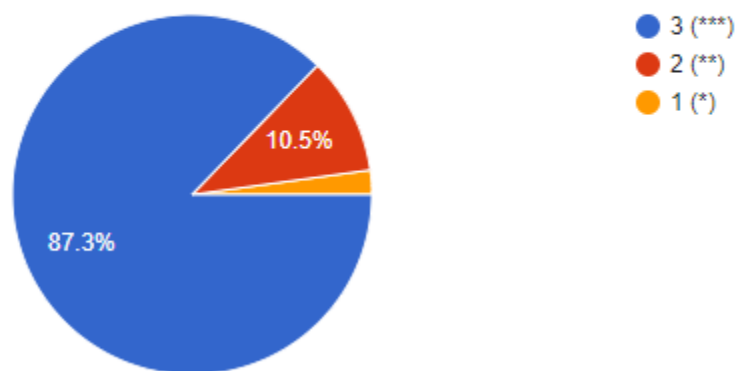
Level of the technical support by the organizing team

275 responses



Overall rating of this Event.

275 responses



Certificate to the participant - Samples

INDIAN IMMUNOLOGY SOCIETY
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Department of Biotechnology, School of Arts and Science
Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)
Deemed to be University, Thanjavur
28th APRIL, 2023
CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms. **Obula Reddy**
from **Chaitanya Bharathi Institute of Technology, Gandipet** has participated
in ImmunFest - 2023 as Poster Presenter.

Topic: Vaccine Pros and Cons: Navigating the Benefits and Risks of Covid-19 Vaccines


Dr. R. Kamaraj
Assistant Professor - Biotechnology
Organizing Secretary


Dr. L. Chinnappa
Dean, Arts and Science
Convener


Dr. K. Balakrishnan
Secretary
Indian Immunology Society


Dr. T. V. Christy
Vice-Chancellor

INDIAN IMMUNOLOGY SOCIETY
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Department of Biotechnology, School of Arts and Science
Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)
Deemed to be University, Thanjavur
28th APRIL, 2023
CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms. **Agrima**
from **Khwaja Moinuddin Chishti Language University, Lucknow** has participated
in ImmunFest - 2023 as Poster Presenter.

Topic: Medical Plants Show Promising Results in Reducing COVID-19 Infections


Dr. R. Kamaraj
Assistant Professor - Biotechnology
Organizing Secretary


Dr. L. Chinnappa
Dean, Arts and Science
Convener


Dr. K. Balakrishnan
Secretary
Indian Immunology Society


Dr. T. V. Christy
Vice-Chancellor

List of Participants

S.No	Prefix	Name of the Participant	Name of the Institution with Place
1	Dr.	R.SATHYA	PRIST Deemed to be University, Thanjavur
2	Mrs.	M.Aarthi	PRIST Deemed to be University, Thanjavur
3	Mrs.	B.Vijaya Bharatha Lakshmi	S.K.R.G.D.C(W), Rajamahendravaram
4	Mrs.	Shikha shinde	Govt K. H. College Abhanpur
5	Ms.	E. DEEPIKA SRI	Alagappa University, Karaikudi
6	Ms.	Sri yamuna M	Kadhir mohideen college adirampattinam
7	Mrs.	Dolly Soni	Govt. Kavyopadhyay Hiralal College Abhanpur Raipur CG
8	Mr.	M R RAMESH	Indira Gandhi Centre For Atomic Research, Kalpakkam
9	Ms.	PRATIMA KANWAR	Govt. Mukutdhar Pandey College Katghora
10	Dr.	Amit Kumar Singh	BMK Govt. Girls College Balod.
11	Dr.	Awadhesh Kumar Shrivastava	Government Danveer Tularam PG college Utai
12	Mr.	Shantaram Baban Bhoje	Shri Pundlik Maharaj Mahavidyalaya, Nandura Rly. Dist. Buldana
13	Mrs.	Lokeshwari Rathia	Govt Sukhram Nage College Nagri Dist-Dhamtari c.g.
14	Dr.	Deshmukh Shaziya Sultana K. A	Dyanopasak College, Parbhani. M. S
15	Prof.	Dr Rupinder Diwan	Government Nagarjuna PG College of Science Raipur
16	Ms.	SNEHA ANGEL JEEVAN	Mar Ivanios College, Nalanchira
17	Dr.	Manoj Patidar	Govt. College Manawar
18	Mr.	Benson Churu	none
19	Mr.	Harjeet Singh	Dr. Bhanwar Singh Potre Govt. College Pendra
20	Dr.	GUNWANT KUMAR CHANDROL	Kalyan P. G. College, Bhilai
21	Dr.	Dr. Mukesh Kumar Patel	Government College Buxwaha, Chhatarpur, Madhya Pradesh 471318
22	Ms.	D.Lohitha ramya	PRIST Deemed to be University, Thanjavur
23	Mr.	Minesh Kumar Patel	K.G. Arts & Science College,Raigarh,C.G.
24	Mr.	Pravinkumar.N	PRIST Deemed to be University, Thanjavur
25	Mr.	UDAY	Government College Ramchandrapur, District- Balrampur-Ramanujanj, (C.G.) Pin- 497220
26	Mr.	UDAY	Government College Ramchandrapur, District- Balrampur-Ramanujanj (C.G.)
27	Mr.	Chandresh	Late Deviprasad ji Chaubey Govt.college Gandai
28	Mr.	Anil kumar	Gandai
29	Mr.	RAJKUMAR K	PRIST Deemed to be University, Thanjavur
30	Ms.	Maya Devi	Govt Mukutdhar panday college katghora
31	Mr.	Yuvraj patel	Govt. B.S.B.A. PG College, Dongargaon , Rajnandgaon (C.G.)
32	Mr.	M. Akash	PRIST Deemed to be University, Thanjavur
33	Mr.	Pramod Kurre	Govt Shaheed venkat Rao postgraduate college Bijapur Chhattisgarh
34	Dr.	Preeti Lata Minz	Government College Kartala Dist-Korba
35	Mr.	Koushal naik	Govt Sukhram Nage College Nagri , Dhamtari C.G.
36	Ms.	Preeti Singh Parihar	Govt Rajmata Vijaya Raje Sindhiya Kanya Mahavidyalaya Kawardha
37	Mrs.	Lata Naik	Bilaspur

38	Mr.	Harsh namdev	Late shri devi prashad ji govt college gsndai
39	Mr.	Shyambihari Yadav	Govt Larang Sai PG College Ramanujganj, C.G.
40	Mr.	Sunil Kumar Yadav	Govt Larang Sai PG College Ramanujganj Balrampur CG
41	Mr.	Kapil Sahu	Govt. Larangsai P.G. College, Ramanujganj
42	Dr.	Maheshwar Singh	Late D. B. T. Government College Gurur
43	Mr.	C. Santhosh	Periyar University
44	Dr.	P. Vino	Dr.P.VINOSri Vidya Mandir Arts & Science College (Autonomous)
45	Ms.	Anamika	Confluence
46	Dr.	Suneeta Patra	Govt. N. P. G. College, Raipur, Chhattisgarh
47	Dr.	Rashmi Singh	DV College, Orai
48	Ms.	Namrata patel	Kirodimal government arts and science college raigarh chhattisgarh
49	Prof.	Rakesh Kumar Sahu	Kalyan P. G. College, Bhilai Nagar Dist - Durg (C.G.)
50	Ms.	BHABITA MANDAVI	RANI RASHMIDEVI SINGH GOV.COLLEGE KHAIRAGARH, C.G.
51	Mr.	Harsh Kumar	Govt Digvijay Autonomous PG College Rajnandgaon Chhattisgarh
52	Dr.	Medhavi Sudarshan	Jagat Naraian Lal c college, khagaul
53	Mr.	Harishankar	K.G.COLLEGE RAIGARH
54	Mrs.	Annapurna Yadav	SW Pukeshwar Singh Bhardiya Govt college Nikum
55	Mr.	Pramod Kurre	Govt Shaheed venkat Rao postgraduate college Bijapur Chhattisgarh
56	Mr.	Lakesh Kumar jangde	KG ART'S AND SCIENCE COLLEGE RAIGARH
57	Mr.	Motiram Sahu	Govt. V.Y.T. PG Autonomous College, Durg (C.G.)
58	Ms.	Khushabu kashyap	Govt. Navin Girls college Gobra Nawapra Raipur
59	Mr.	Madhav Mandal	Govt. Larang Sai PG College Ramanujganj
60	Mr.	Kamesh Singh	Govt Larang Sai college ramanujganj
61	Ms.	Akash yadav	Department of zoology
62	Mr.	Harshit Gupta	Sant gahira guru
63	Dr.	POONAM AHIRWAR	GOVT P G COLLEGE SEONI M.P
64	Prof.	ISHWAR PRASAD SAHU	NAVEEN GOVT COLLEGE KUSMURA DIST RAIGARH
65	Ms.	Jenila	Meenakshi hospital thanjavur
66	Dr.	Sahaya Mary	Teresian College, Mysore
67	Ms.	M.VIJAYALAKSHMI	V.O.Chidambaram College, Thoothukudi
68	Ms.	Jyoti Otageri	Sinhgad College of Science, Pune
69	Dr.	Dr. Sandhya Tambekar Wanjari	Dhote Bandhu Science College, Gondia, Maharashtra
70	Mrs.	Dolly Soni	Govt. Kavyopadhyay Hiralal College Abhanpur Raipur CG
71	Ms.	Pawanjeet Kaur	GD Goenka University, Gurugram
72	Dr.	Smriti Bajpai	Bhavans College
73	Mr.	Mahendra B V	Govt First Grade College of Arts Science Commerce Sira Tumkur dist
74	Dr.	Anil Kumar	B.R.B. College, Samastipur, Bihar
75	Dr.	RAMESH KASHIRAM SHENDE	Matoshri Anjanabai Mundafale College of Social Work Narkhed Dist Nagpur M.S. 441304.
76	Prof.	Sambhaji Hanmantrao Bhosale	Vilasrao Deshmukh Foundation, Group of Institutions, Latur

77	Mr.	Rajan Singh	J.C Bose University of Science and Technology YMCA Faridabad Haryana India
78	Mr.	Nitin Gupta	J.C Bose University of Science and Technology YMCA Faridabad Haryana India
79	Mr.	DEBASISH SAHOO	M.A. MAHAVIDYALAYA, LEMALO, CUTTACK
80	Mr.	LT PRAMOD	SHARNBASVA university
81	Dr.	Swati Sharadrao Ardhapurkar	Arts and Commerce Mahila Mahavidyalaya, Ambajogai
82	Mr.	Er. DEEPAK TIWARI DSK	RAIPUR
83	Mr.	Govind Laljibhai Vekariya	Department of Human Rights and International Humanitarian Laws, Rajkot
84	Mr.	S Baskar and Dr L Karikalan	Vistas, Chennai
85	Mr.	Nilesh Panchal	Navjeevan charitable trust
86	Mrs.	AYESHA SABEEN M	Marudhar Kesari Jain College for Women, Vaniyambadi
87	Dr.	DHONDIRAM TUKARAM SAKHARE	Shivaji Art's, Comm. & Science College Kannad Dist. Aurangabad Maharashtra
88	Mr.	G MAHESH KUMAR	IARE,DUNDIGAL
89	Ms.	P. Usha	IARE, Hyderabad
90	Prof.	Dr Anubha Pundir	GEU, Dehradun
91	Ms.	Ritika	CLC, SIKAR
92	Dr.	Dr. V Anitha Rani	Institute of Aeronautical Engineering, Hyderabad
93	Dr.	K.SANTHOSH KUMAR	PROVIDENCE COLLEGE FOR WOMEN COONOR
94	Dr.	Dr.Ilamathi.J	PRIST Deemed to be University, Thanjavur
95	Dr.	Nidhi Shekhawat	Vedanta PG Girls College, Reengus
96	Dr.	Punitha N	St.Joseph's College of Engineering
97	Mrs.	P. MEENATCHI	Mohamed Sathak College of Arts and Science, Sholinganallur
98	Prof.	Kk yadav	Agrawal P G college jaipur
99	Dr.	Prashanth T	Vidya Vikas Institute of Engineering and Technology
100	Dr.	Dr. Sanjay Bhagwan Chitalkar	S. G. Arts, Science & G. P. Commerc College, Shivle, Tal. Murbad, Dist. Thane.
101	Dr.	DR.SMT.SUNILA EKKA	Government K.R.D.College Nawagarh District Bemetara Chattisgarh state
102	Dr.	D. Hemalatha	PSG College of Arts & Science, Coimbatore
103	Dr.	Shivbiharee kushwaha	Govt Thakur Ranmat Singh College Rewa MP
104	Dr.	Ravindra Kumar Bhandari	Government First Grade College Fharahatabad
105	Dr.	Zeaur rahman jafri	Mirza Ghalib College Gaya, Bihar
106	Mr.	GOKUL R R	PRIST Deemed to be University, Thanjavur
107	Ms.	S.Mythili	PRIST Deemed to be University, Thanjavur
108	Dr.	K. Syamala Devi	G. Narayanamma Institute of Technology and Science (for Women), Shaikpet
109	Ms.	Aarthi karnan	PRIST Deemed to be University, Thanjavur
110	Ms.	V.Keerthana	PRIST Deemed to be University, Thanjavur
111	Ms.	Deepika	PRIST Deemed to be University, Thanjavur
112	Dr.	Dr. Sangita Devi Sharma	Government Naveen College Bori Durg C.G.
113	Mr.	M.Subash	PRIST Deemed to be University, Thanjavur
114	Mr.	K. Stalin	PRIST Deemed to be University, Thanjavur
115	Ms.	K.Uma Mageshwari	PRIST Deemed to be University, Thanjavur

116	Ms.	P.Deepa	M.Sc Biotechnology
117	Ms.	K. Gayathri	PRIST Deemed to be University, Thanjavur
118	Ms.	S.HEMALA DEVI	Ponnaiyah Ramajayam Institute of Science and Technology (PRIST),Thanjavur
119	Mr.	K. Thodeeswaran	PRIST Deemed to be University, Thanjavur
120	Ms.	T.Antony mercy	PRIST Deemed to be University, Thanjavur.
121	Ms.	Benazir begum	PRIST Deemed to be University, Thanjavur
122	Mr.	G. Kishore	PRIST Deemed to be University, Thanjavur
123	Mr.	M.GURUNATHAN	PRIST Deemed to be University, Thanjavur
124	Dr.	Siddalingya	Government First Grade College, Kembhavi
125	Mr.	S.Santhosh kumar	PRIST Deemed to be University, Thanjavur
126	Mr.	Ramasamy.p	Ayyasamipatti
127	Mr.	P. Nandhana	PRIST Deemed to be University, Thanjavur
128	Ms.	Afsana I	Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Thanjavur.
129	Ms.	S.Mythili	PRIST Deemed to be University, Thanjavur
130	Ms.	K. Madhumitha	PRIST Deemed to be University, Thanjavur
131	Mr.	W.David	PRIST Deemed to be University, Thanjavur
132	Ms.	P. KIRUTHIKA	PRIST Deemed to be University, Thanjavur
133	Ms.	Meghana	PRIST Deemed to be University, Thanjavur
134	Mr.	Ruturaj Shashikant Shete	Tuljaram Chaturchand College, Baramati
135	Dr.	RAJASEKAR M	Hindustan Institute of Technology and Science, Chennai
136	Dr.	P.PRAVEENA P	PRIST Deemed to be University, Thanjavur
137	Ms.	Janani.R	PRIST Deemed to be University, Thanjavur
138	Mr.	S.JAYAKUMAR	SELVAMM ARTS AND SCIENCE COLLEGE,NAMAKKAL
139	Dr.	Rajkumar Gurusamy	Yadava College Madurai
140	Mr.	R.vijay	PRIST Deemed to be University, Thanjavur
141	Mr.	Shubham Aggarwal	IIT Roorkee, Roorkee
142	Ms.	R. Abinaya	PRIST Deemed to be University, Thanjavur
143	Dr.	Aftab Ahmad	Zoological Survey of India
144	Dr.	Puspanjali Maharana	Saraswati degree vidya mandir,BERHAMPUR
145	Mr.	Mohd Raza	MIT Moradabad
146	Mr.	Kumar.D	PRIST Deemed to be University, Thanjavur
147	Ms.	B. Ashwini	Anna university, ACT campus, Guindy
148	Ms.	S.Maheswari	PRIST Deemed to be University, Thanjavur
149	Dr.	T GOUTHAMAN	Government Arts College for Men, Krishnagiri
150	Mr.	JONES.A	PRIST Deemed to be University, Thanjavur
151	Ms.	Magdalene Kiewhuo	St. Joseph university, Nagaland
152	Dr.	M.Biruntha	Alagappa University, Karaikudi, Sivagangai-Dt
153	Prof.	Ch.M Kumari Chitturi	Sri Padmavati Mahila Visvavidyalayam(women's university), Tirupati
154	Dr.	R.PREMALATHA	C.Kandaswami Naidu College for women
155	Ms.	Yashika patel	Itm University naya raipur
156	Ms.	P.Kowsika	Bharathidasan university,Trichy
157	Mr.	Abhinav Sao	ITM University, Naya raipur

158	Dr.	Naveen Kumar C	PSP Medical College Hospital and Research Institute, Kancheepuram
159	Ms.	D.Ashika	PRIST Deemed to be University, Thanjavurvallam
160	Mr.	Gowri Sankar Jambunathan	PRIST DEEMED TO BE UNIVERSITY, THANJAVUR
161	Dr.	Taha Yaseen Salih Alqaisy	University of Anbar
162	Mrs.	A.BOWSIYA JEYARANI	PRIST Deemed to be University, Thanjavur
163	Mr.	Bhuneshwar Behra	Govt. V.Y.T. P.G. Autonomous College, Durg
164	Ms.	B. Renuga	Prist University
165	Ms.	Divya Agrawal	IIT Delhi
166	Mr.	BASAVARAJ.K	Davangere University, Davangere
167	Dr.	Sunil Jalhare	Godawari Art's Jr Sr college Ambad
168	Mr.	G. Krishna Murthy	Dr.Buddollas Institute of Life sciences
169	Ms.	S.ABIRAMI	PRIST Deemed to be University, Thanjavur
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171	Ms.	Shreya Salui	Ballygunge Science College Campus (University of Calcutta), 35, Ballygunge Circular Rd, Ballygunge, Kolkata, West Bengal 700019
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737	Ms.	Eshika tyagi	DAV college muzaffarnagar
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745	Mrs.	S.gayathri	Bon secours collage for women
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28TH APRIL, 2023

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Organized by
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Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)
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President



MESSAGE

It gives me immense pleasure to know that the Department of Biotechnology, PRIST School of Arts and Science, is organizing the International Conference **ImmunFest - 2023**. I am sure that this conference will provide a forum to national and international Students, Academicians, Researchers and Industrialists to interact and involve in Research and Innovation pertaining to the field of Biotechnology. Such academic events will certainly offer huge benefits to the students, faculty, and researchers immensely and widen the horizons of their knowledge and their professional experience in the field of Biotechnology.

I sincerely appreciate the humble efforts of the School of Arts and Science in providing a platform for students, academicians, researchers and industrialists to share their ideas and research outcome through the forum of this international conference.

My Best Wishes are due to all delegates and organizing committee to make this event as a spectacular one.

25th April, 2023

Dr. N. ETHIRAJALU



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Vice - Chancellor

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)

Deemed to be University

Thanjavur, Tamil Nadu, India.



MESSAGE

I am delighted to note that the Department Biotechnology, School of Arts & Science of our University is organizing the international conference 'IMMUNFEST' on April 28, 2023. It is indeed a proud moment that the Indian Immunology Society is joining hands with Ponnaiyah Ramajayam Institute of Science & Technology (PRIST), sponsoring the prestigious event in our campus.

The pandemic that the humankind recently encountered, whose after-effects are still lingering on the planet, is an eye opener about the need for immunization against infectious diseases. How truthful is the statement that 'immunization saves lives'. Statistics tell us immunization currently prevents 3.5 to 5 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza and measles. Immunization is a key factor of primary health care and an undeniable human right. In the present world context, immunization is one of the best health investments one's money can buy.

At a time when a global decline in vaccine confidence is being registered, it is heartening to note that India figures as one among the countries studied where an improvement has been indicated for popular perception of the importance of vaccines for the children.

Against the backdrop of a UNICEF report that warns of the growing threat of vaccine hesitancy due to factors like misleading information and declining trust in vaccine efficiency, a conference like 'IMMUNFEST' assumes greater significance. I am sure, the 'Conference' will go a long way in helping realize the goal of Indian Immunology Society i.e., advancing immunology and its related disciplines, by way of sharing of knowledge and information between researchers thereby addressing the potential application of immunologic principles in clinical practice. Needless to say, that the academic community stands to gain immensely from the deliberations that would happen at 'IMMUNFEST'.

Efforts by Dr. R.Kamaraj, Assistant Professor of Biotechnology and his team of organizers guided by the HoD and the Dean are truly commendable!

Wishing 'IMMUNFEST' all success!

April 24, 2023

Dr. T.V. Christy



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Thanjavur, Tamil Nadu, India.



MESSAGE

I am extremely happy that the Department of Biotechnology is organizing the International Conference **ImmunFest - 2023**, in collaboration with Immunology Society on 28.04.2023. I hope such initiatives will promote awareness about the hygiene status, precaution and disease progression in human sufferings.

I am sure the deliberations at the Conference will spread awareness among people on the dreaded disease and suggest people to give up habits like smoking and changing food habits to prevent some common diseases.

I hope the conference enhances professionalism and capabilities of all the participants and leads to the future advancement of research and nursing profession.

I appreciate efforts of the organizing team for selecting such an innovative and appropriate theme for the conference.

I wish the Event all success.

Dr. S. UDAYAKUMAR

April 26, 2023



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AIIMS, New Delhi

Date: 19th April 2023



Dear Esteemed Participants of ImmunFest 2023

On behalf of IIS, we welcome you all to the Indian Immunology Society (IIS) sponsored International conference 'ImmunFest - 2023' organized by the Department of Biotechnology, School of Arts and Science, Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Deemed to be University, Thanjavur, Tamil Nadu on 28th April 2023 to celebrate International Day of Immunology 2023. The Theme for 2023 is '**IMMUNOLOGY TALKS TO PUBLIC HEALTH**'

The event has one Plenary Talk and three Special Talks by established Clinicians, Scientists and Academicians. We are happy that the event has garnered participation from all over India, representing nearly 26 states and abroad (Malaysia, USA, Kenya, Iraq, Egypt, South Korea and Nigeria). A total of 613 participants have registered in the event with 601 from India. Half of the participants are faculty members from Academic Institutions and half of them are students (305). A total of 70 abstracts have been received with 40 participants presenting in-person and 30 will present their e-posters online.

We convey our deepest regards to Dr. R. Kamaraj, Assistant Professor, Department of Biotechnology, School of Arts and Science, PRIST Deemed to be University and his team for an impressive planning for the event and best wishes for the successful organisation of the ImmunFest 2023.

Dr. Taruna Madan
President, Indian Immunology Society



Indian Immunology Society

Estd.1972, Registered under the Indian Societies Act

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AIIMS, New Delhi

Dr. Sujata Mohanty
AIIMS, New Delhi

Dr. Suktilang Majaw
NEHU, Shillong

Ex-Officio Members:

Dr Sumil Arora

Dr Amit Awasthi

MESSAGE

16.04.2023



It gives me immense pleasure to note that the Department of Biotechnology, PRIST Deemed to be University, Thanjavur is organizing an International conference 'ImmunFest - 2023' on 28.04.2023 under the auspices of Indian Immunology Society (IIS). It is very much appropriate for the Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) deemed to be University to organize this conference, an Institution which has completed 15 years of academic and research excellence. The field of immunology continues to emerge as one of the leading scientific disciplines contributing richly to human healthcare. The theme of the conference is very much apt to cater the needs of PG students, researchers and scientists in the area of transplantation and cancer Immunology. The programme chalked out by the organizers envisaged highly advanced/applied areas of Immunology and I feel that these topics are very much useful to the young researchers.

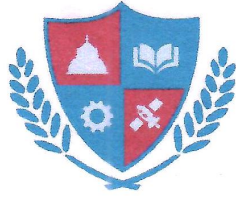
Organizing such conferences in highly advanced and much needed topics accelerates the growth of sub-disciplines of immunology such as Immunodiagnostics, Immunotherapeutics and vaccinology. I wish **Dr. R. Kamaraj** and his entire team for every success and participants a more delighted academic experience.

Dr. K. BALAKRISHNAN
Secretary
Indian Immunology Society

IIS Headquarters: AIIMS, N. Delhi. Website: www.indianimmunologysociety.org Phone: +91-11-26594275

President's Office: ICMR-National Institute for Research in Reproductive and Child Health, Mumbai, India.

Phone: 022-24192049 Fax: +91-22-24139412 Cell: +91-9867197040 email: iisexecutive2022@gmail.com



PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

Declared as DEEMED-TO-BE-UNIVERSITY
U/s 3 of UGC Act, 1956

Dr. M. ABDUL GHANI KHAN

Registrar

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)

Deemed to be University

Thanjavur, Tamil Nadu, India.



MESSAGE

It gives me immense pleasure and pride to note that the Department of Biotechnology, School of Arts and Science is organizing an International Conference IMMUNFEST - 2023 on 28th April 2023.

Conferences / Seminars of such type will definitely cater the needs of aspirants and also help the learners and researchers to keep pace with the emerging latest trends in the related field of specialization. Conference of this nature would definitely bridge the gap between the academic and industrial scenario. Further, it paves way for sharing of knowledge and expertise of resource persons and experts.

I heartily congratulate the Dean and the entire team of Department of Biotechnology for having organized such a wonderful International Conference.

I wish the Conference all success.

Best wishes,

Dr. M. ABDUL GHANI KHAN

April 26, 2023

Tel No: Work: 04366-277257
Mobile: 91-9597756459
E-mail:
gopalan@cutn.ac.in
natagopalan@gmail.com
hodeph@cutn.ac.in



Dr. N. Gopalan,
Professor and Head

Département of Epidemiology and Public Health
School of Life Science,
Central University of Tamil Nadu,
Thiruvavarur – 610 005, Tamil Nadu, India.

12.04.2023

Message



It gives immense pleasure that, the Department of Biotechnology, Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Deemed to be University, Thanjavur is organizing a day international conference on “**IMMUNFEST- 2023**” in collaboration with the Indian Immunology Society to celebrate international Immunology Day On 28th April 2023. The theme of conference “Immunology Talks to Public Health” of Infectious diseases, vaccinology, molecular epidemiology of infectious diseases and various other topics on immunology will bring together eminent scientist from various immunologists of international importance.

I am sure that the most vibrating and exciting atmosphere in **IMMUNFEST 2023** will encourage the young delegates, brimming with refreshing enthusiasm and infectious energy to all students to find solutions of Public Health immune status of infectious diseases.

It is my aspiration that this International Conference will be a foundation for the growth of new ideas on immunology to public health. I wish **IMMUNFEST 2023** a grand success and I appreciate the sincere efforts of the organizer.

J. Gopalan
11/4/23

Natarajan Gopalan



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(KPT/JPS/DFT/US/K 05)

13 April 2023

Congratulations to the Department of Biotechnology, PRIST Deemed to be University, Thanjavur, for hosting the 'ImmunFest - 2023' on 28.04.2023, a one-day international conference sponsored by the Indian Immunology Society (IIS). This conference has a good lineup of eminent speakers in the areas of Immunology and presentations. The organizing secretary and his team deserve commendation for bringing scientists, academicians, and young researchers together to foster collaboration and idea-sharing.

India has seen significant growth in Immunology with efforts from eminent immunologists and the Indian Immunology Society. However, there is still much room for growth, particularly in disease diagnosis. Continued research in immunological aspects is crucial to face the challenges of emerging and re-emerging diseases. I am sure the conference's speakers will inspire and motivate young researchers to progress in the field of immunology in the nation's service. I extend my heartfelt wishes to Dr R. Kamaraj and his entire able team for their success.

Sincerely,

A handwritten signature in black ink, appearing to read "M. R. Ch." with a stylized flourish at the end.

Prof. Dr M. Ravichandran



PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

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Dr. L. CHINNAPPA, M.Sc., M.Tech., M.Phil., M.Ed., Ph.D.,
Dean – School of Arts and Science
Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)
Deemed to be University
Thanjavur, Tamil Nadu, India.



MESSAGE

It gives me immense pleasure to write a message for the Indian Immunology Society (IIS) sponsored International conference 'ImmunFest - 2023' organized by the Department of Biotechnology, School of Arts and Science, Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Deemed to be University, Thanjavur, Tamil Nadu.

The scientific programme is highly motivating and I am sure the participants would greatly benefit from the national experts. The conference will provide an excellent platform for exchange of views and sharing new knowledge to all in the field of Biology. I take this opportunity to congratulate the invited speakers, awardees and delegates. I am sure that a good conference has been planned and organized for the benefit of healthy interaction among the participants.

I wish a grand success for the conference.

(Dr. L. Chinnappa)

24th April 2023



PONNAIYAH RAMAJAYAM INSTITUTE OF SCIENCE & TECHNOLOGY (PRIST)

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Dr. R. KAMARAJ, M.Sc., Ph.D.,

Assistant Professor

Department of Biotechnology

Ponnaiyah Ramajayam Institute of Science and Technology (PRIST)

Thanjavur, Tamil Nadu, India.

E-mail : kamaraj@prist.ac.in; kamaraj.lordshiva@gmail.com

Mobile : +91-7373955155; 8667704282



MESSAGE

It gives me immense pleasure in inviting you all to the Indian Immunology Society (IIS) sponsored International conference 'ImmunFest - 2023' organized by the Department of Biotechnology, School of Arts and Science, Ponnaiyah Ramajayam Institute of Science and Technology (PRIST) Deemed to be University, Thanjavur, Tamil Nadu. This event has garnered participation from all over India, representing nearly 26 states and abroad. I am pleased to welcome the National and International delegates who have responded overwhelmingly, making the Immunology event at Thanjavur a resounding success.

I extend a warm welcome to students, research scholars, delegates, and invited speakers from India and abroad. We are excited to host this event and look forward to the exchange of knowledge and ideas in the field of immunology. Thank you for being a part of **ImmunFest - 2023**.

Dr. R. KAMARAJ
Organizing Secretary - ImmunFest - 2023



IMMUNFEST 2023



List of Abstracts

Abstract No.	Authors	Title of the abstract	Abstracts received from
OP - I	<i>Natarajan Gopalan and Kamaraj R</i>	Climate change, Immunology and vector-borne diseases	Tamil Nadu
OP - II	<i>Senthinayagam</i>	Autoimmune Kidney Disease	Tamil Nadu
OP - III	<i>Prabakaran D.S</i>	Role of Radiation Therapy (X-ray & C-ion) in treating Cervical Cancer	Republic of Korea
OP - IV	<i>Balakrishnan K</i>	HLA in Infectious Diseases	Tamil Nadu
PP - 1	<i>Obula Reddy. C and Balaji Doolam</i>	Vaccine Pros and Cons: Navigating the Benefits and Risks of Covid-19 Vaccines	Telangana
PP - 2	<i>Maheswaran Baskaran and Pandiselvam Pandiyarajan</i>	Computational prediction of the effect of mutations in the receptor-binding domain on the interaction between SARS-COV-2 and Human ACE2	Tamil Nadu
PP - 3	<i>Mariselvam. M</i>	The immunological role of B7- HA in pregnant women with SARS-COVID Infection	Tamil Nadu
PP - 4	<i>Sakthi Muthu Kumar. S and Maheswaran Baskaran</i>	Potential antiviral peptides targeting the SARS-CoV-2 spike protein	Tamil Nadu
PP - 5	<i>Mahadevi. R</i>	Current Review of the SARS-CoV-2 Omicron Sub variant BF.7 (BA.5.2.1.7) Virology and Preventing Strategies	Tamil Nadu
PP - 6	<i>Yash Sunil Pol</i>	Survey on awareness among people about immunity increasing ingredients of kadha	Maharashtra
PP - 7	<i>Prakash Rajaram Chavan</i>	Comparative study of vaccinations in sangli and Kolhapur district of western Maharashtra	Maharashtra
PP - 8	<i>Anitha. P and Maheswari. A.S</i>	Comparative analysis of covid vaccines	Tamil Nadu
PP - 9	<i>Agrima and Arshi Fatima</i>	Medical Plants Show Promising Results in Reducing COVID-19 Infections	Uttar Pradesh
PP - 10	<i>Devvrat Varshney</i>	Identification of exosomal miRNA in pulmonary tuberculosis patient using Real Time PCR method	Uttar Pradesh
PP - 11	<i>Ayesha Sabeen. M</i>	Conventional phenotypic modalities to detect extended spectrum beta lactamases in urinary tract infections	Tamil Nadu
PP - 12	<i>Vikas Kushwaha</i>	Multi-epitope vaccines: A novel strategy for development of vaccine against infectious diseases	Chandigarh
PP - 13	<i>Veerakkumar K and Kiresee Saghana P.R</i>	In Silico Analysis and Homology modelling of unstructured protein of malaria	Tamil Nadu
PP - 14	<i>Naveen Kumar. C</i>	Detection of Hypersensitivity Reactions Producing Mycotoxins from Patients who Attending Tertiary care Hospital	Tamil Nadu
PP - 15	<i>Rashmi Singh</i>	Study of brucellosis in cattle's of Uttar Pradesh	Uttar Pradesh
PP - 16	<i>Subavathy. P and Shibana. C</i>	Rheumatoid arthritis: a systemic autoimmune disease and its diagnosis	Tamil Nadu
PP - 17	<i>Shibana. C and Subavathy. P</i>	Type 1 Diabetes: Immune mechanism and therapeutic strategies	Tamil Nadu
PP - 18	<i>Vikhe. P.S, Vikhe. A.S, Rohamare. S.S</i>	Review on: Role of Vitamin C as Immunity Booster in Cancer and Infectious Diseases in Humans	Maharashtra
PP - 19	<i>Vijay Aadhithya. C, Praveena. PL and Shummuga Priya. V</i>	An innovation of hydrogel injection to repair spontaneous CSF leak	Tamil Nadu
PP - 20	<i>Santhosh Kumar</i>	The role of diagnostic and antimicrobial stewardship in the implementation of rapid molecular infectious disease diagnostics	Tamil Nadu
PP - 21	<i>Uma Maheswari</i>	Immunology of infectious diseases	Andhra Pradesh
PP - 22	<i>Aashish verma</i>	Effect of STING protein in cancer	Uttar Pradesh



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PP - 23	<i>Renuga. B, Bakiya Lakshmi. S.V, Gowri Sankar. J, Gayathri. K, Kamaraj. R</i>	A Study on Anticancer activity of Zizyphus Spina Christi (Christ's thorn) Silver Nanoparticles on Skin Cancer Cell line	Tamil Nadu
PP - 24	<i>Kalaivani. R and Atchaya. D</i>	A Study on anticancer activity of Parmotrema perlatum (lichen) with liver cancer (HepG-2) cell line	Tamil Nadu
PP - 25	<i>Bakiya Lakshmi. S.V, Hemamalini. S</i>	Effect of l-dopa from traditional pigmented rice (illupaipoo samba) for parkinson's diseases	Tamil Nadu
PP - 26	<i>Bowsiya Jeyarani. A, Kumar. P, Ilamathi. J</i>	Camphene inhibits mutant BRCA1 and BRCA2 genes in breast cancer	Tamil Nadu
PP - 27	<i>Kumar. P, Bowsiya Jeyarani. A, Ilamathi. J</i>	Recent Research in the Diagnostic and Treatment of Parkinson's Disease	Tamil Nadu
PP - 28	<i>Swati Mangla and Veer Bhan</i>	Evaluation of anti-oxidant activity of Syzygium cumini in Parkinson disease using Drosophila as a model organism	Haryana
PP - 29	<i>Isai. M</i>	Advances in molecular epidemiology of infectious diseases: A review	Tamil Nadu
PP - 30	<i>Shinde Ganesh S, Rahul Kunkulol, Sandeep Narwane, Ravindra Jadhav</i>	Evaluation of anti-asthmatic activity of achyranthes aspera linn root extract	Uttar Pradesh
PP - 31	<i>Arshi Fatima</i>	Edible vaccine	Uttar Pradesh
PP - 32	<i>Bhuneshwar Behra, Mohammed Shoeb, Alka Mishra</i>	Effect of life style factors on semen parameters of rural and urban population in chhattisgarh	Chhattisgarh
PP - 33	<i>Anjali Pandey, Kunal Mukhopadhyay, ManishKumar</i>	Identification and characterization of leaf rust responsive resistant Genes of Puccinia Trticina regulated by Micro RNA like RNA	Jharkhand
PP - 34	<i>Manoj Patidar</i>	Conversion of IL-15 into a Stable and Efficacious Therapeutic	Madhya Pradesh
PP - 35	<i>Pyare Lal</i>	An Attunement on UGs of Al _{0.27} Ga _{0.73} N/GaN for Disinfection Applications in Immunology	Rajasthan
PP - 36	<i>Khushwant Nandal and Manjeet Kaur</i>	The Complex Role of the Gut Microbiome in Inflammatory Bowel Disease and Immune Homeostasis	Haryana
PP - 37	<i>Aruna. S, Uzma Nuzhath, Ayisha Haaniya .P</i>	Recent advances in nanotechnology for dendritic cell - based immunotherapy	Tamil Nadu
PP - 38	<i>Archana Gupta</i>	Helminths and Immune responses	Bihar
PP - 39	<i>Deepanshu Pandey, Asmita Sharma, and Lal Kumar Chandel</i>	Synthesis, Characterization and Medicinal Applications of Chromones	Madhya Pradesh
PP - 40	<i>Rashmi. T.S and Kumarswamy. M. N</i>	Phytochemical analysis and evaluation of antiurolithiatic, biostimulant & mordant properties of banana pseudostem extract	Karnataka
PP - 41	<i>Dharani, Bakiya Lakshmi. S.V, Gowri Sankar. J, Gayathri. K, Kamaraj. R</i>	A Study on Synthesis of Silver Nanoparticles using Zizyphus Spina Christi (Christ's thorn) leaves extract	Tamil Nadu
PP - 42	<i>Dineshkumar Gunasekaran and Santhiya Natarajan</i>	Genome-based approach delivers vaccine candidates against pseudomonas fluorescens	Tamil Nadu
PP - 43	<i>Nidhi Shekhawat</i>	Study of active ingredients of five indigenous plants with strong medicinal and immune booster properties	Rajasthan
PP - 44	<i>Sasikala Saravanan. M</i>	Role of medical textiles in infectious disease control system	Tamil Nadu
PP - 45	<i>Popat P. Pathare</i>	Impact assessment of Azadirachta indica leaves extract on Spilosoma obliqua Walker (Bihar hairy caterpillar) infesting Morus alba L., (Mulberry Plant)	Maharashtra
PP - 46	<i>Kalpna Soni</i>	Drinking water Quality Assessment of Alwar (Raj.): A Case Study	Rajasthan
PP - 47	<i>Shobana Gunasekaran, Agnel Arul John</i>	Influence of polyherbal ointment on	Tamil Nadu



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	<i>Nayagam and Rameshkannan Natarajan</i>	immunocompromised excision wounded animals	
PP - 48	<i>Amirtham. S, Durgadevi. M</i>	Cultivation and characterization of pigmented mushroom (pleurotusostreus) using beetroot as substrate in spawn production	Tamil Nadu
PP - 49	<i>Sengathir. A, Samdeniyal. Y, Bakiya Lakshmi. S.V, Gowri Sankar. J, Gayathri. K, Uma Mageshwari. K, Kamaraj. R*</i>	Comparative analysis of bioactive compounds in Indian and China Garlic Allium Sativum (L.) by GC-MS	Tamil Nadu
PP - 50	<i>Nithyashree S and Karthik S</i>	Applications of industry 4.0 in Medical Field	Karnataka
PP - 51	<i>Arpit Gupta, Pranay Wal and Ankita Wal</i>	Flaxseed (Linum usitatissimum) used as an Immunomodulator in various Life-style disorders	Uttar Pradesh
PP - 52	<i>Rajasulochana. P</i>	Detection of antimicrobial activity of bacteriocin	Tamil Nadu
PP - 53	<i>Monika Khurana</i>	Characterization of Nanoparticles incorporated into Lipid Membranes	Haryana
PP - 54	<i>Mohd. Shaikhul Ashraf</i>	Medicinal Plants as Immunity Boosters: A Review	Jammu and Kashmir
PP - 55	<i>Azhagu Madhavan Sivalingam, Arjun Pandian, LakshmananGovindan</i>	Green Synthesis of Silver Nanoparticles from Moringaoleifera Leaf Extract for Antibacterial Activity against Plant-Pathogenic antimicrobial activity: In-Vitro and In- Vivo Studies	Tamil Nadu
PP - 56	<i>Dash S and Chatterjee S</i>	A review on the effect of age on antimicrobial activity of wheat grass (triticum aestivum l.)	West Bengal
PP - 57	<i>Stalin. K, Sengathir. A, Samdeniyal. Y, Bakiya Lakshmi. S.V, Gowri Sankar. J, Gayathri. K, Kamaraj. R</i>	Comparative analysis of bioactive compounds in Indian and China Garlic Allium Sativum (L.) by GC-MS	Tamil Nadu
PP - 58	<i>Karikalan, L and Baskar. S</i>	Preparation, stability and thermophysical properties of nanofluid	Tamil Nadu
PP - 59	<i>Gaurav and Veer Bhan</i>	Evaluation of anti-diabetic activity of selected plants using Drosophila as a model organism	Haryana
PP - 60	<i>Ilamathi. J and Subash. M</i>	The pharmacological activities and mechanisms of Sulfated Polysaccharides: an overview	Tamil Nadu
PP - 61	<i>Monica. V, Ilamathi.J</i>	Evaluation on antimicrobial activity of silver Nanoparticles using Cymbopogon citratus Leaf Extract	Tamil Nadu
PP - 62	<i>Elakkiya. R and Ilamathi.J</i>	Evaluation of antimicrobial assay and characteristics of zinc nanoparticles produced by green synthesis method using actinidia deliciosa fruit extract	Tamil Nadu
PP - 63	<i>Karthiga. M and Ilamathi.J</i>	Bioinspired synthesis of phyllanthus acidus leaf extract Functionalized silver nanoparticles and its antimicrobial Evaluation	Tamil Nadu
PP - 64	<i>Mukta Mayee Kumbhar</i>	Incidence of Paramphistomumspp. in Goat in Bhubaneswar, Odisha	Odisha
PP - 65	<i>Mamta Bhayal and Pankaj Kumar Patel</i>	Evaluation of anti-colon malignancy potential of plant-derived peptides as functional food using In-silico approach	Madhya Pradesh
PP - 66	<i>Deepti Tomar</i>	Control of Euschistus servus by plant products	Madhya Pradesh
PP - 67	<i>Mahalakshmi. N, Monika. G, Lavanya. A, Gowsalya. J, Joncina. C, Anu. D</i>	Different types of wine and its therapeutic value	Tamil Nadu
PP - 68	<i>Veera Nagendra Kumar. D</i>	Phytochemical Screening and Antibacterial Activity of Phyllanthus niruri in Methanolic and Aqueous Extracts	Andhra Pradesh
PP - 69	<i>Veeramani. T and Aarthi. K</i>	Study in Proximate Composition of Seaweeds in Gulf of Mannar, Tamil Nadu, India	Tamil Nadu
PP - 70	<i>Veeramani. T and Ansarali. M</i>	Study on bioactive compounds from fishes	Tamil Nadu
PP - 71	<i>Veeramani. T and Kiruthika. P</i>	Studies an amino acid and fatty acid from Marine Fishes	Tamil Nadu
PP - 72	<i>Veeramani. T and Vijay. R</i>	Study on vinegar production from vegetable and fruits	Tamil Nadu
PP - 73	<i>Veeramani. T and Mageshwaran. D</i>	Study on bioethanol production from microalgae	Tamil Nadu



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PP - 74	<i>Deepa. P and Veeramani. T</i>	Anti-cancer activity from curcumin - Overview	Tamil Nadu
PP - 75	<i>Hemaladevi. S and Veeramani. T</i>	Antifungal in vitro potential of aloe vera gel as postharvest treatment to maintain blueberry quality during storage- Overview	Tamil Nadu
PP - 76	<i>Chidhambara Priya Dharshini. K and Umamaheswari. S</i>	Evaluation of anti-diabetic activity of kattuyanam rice through in vitro, in vivo and <i>In silico</i> approaches	Tamil Nadu
PP - 77	<i>Yadav. KK</i>	Cadmium Toxicity	Rajasthan
PP - 78	<i>Uday and Shriram Kunjam</i>	Green Synthesis and Characterization of Silver (Ag) Nanoparticles from Bulb Extract of <i>Urginea indica</i> (Roxb.) Kunth	Chhattisgarh
PP - 79	<i>Murugan Muthukumar, Varatharaju Govindaraju and Gayathri Murugan</i>	Preliminary Phytochemicals Analysis and Antimicrobial Assessment of Leaf Extract of <i>Dodonaea Viscosa</i> (L.) Jacq.	Tamil Nadu
PP - 80	<i>Prabhavathi.C</i>	Applications of Nanotechnology in Immunology	Tamil Nadu
PP - 81	<i>Rajasekar and Angelina Geetha</i>	Human Immunity Prediction Using Machine Learning Algorithms	Tamil Nadu
PP - 82	<i>Raja. A</i>	A Survey on the Terrestrial Fungi Flora in Vadachennimalai Hill, Salem District, Tamil Nadu, India	Tamil Nadu
PP - 83	<i>Sanjay and Dineshkumar K</i>	Computational analysis of iron-binding proteins in <i>Lichtheimia corymbifera</i>	Tamil Nadu
PP - 84	<i>Purusothaman S and Dineshkumar K</i>	In silico identification of iron-binding proteins in <i>Rhizopus arrhizus</i>	Tamil Nadu
PP - 85	<i>Robika and Dineshkumar K</i>	Bioinformatics prediction of iron-binding proteins in <i>Apophysomyces elegans</i>	Tamil Nadu
PP - 86	<i>Punniyamoorthy and Dineshkumar K</i>	Bioinformatics studies of iron-binding proteins in <i>Rhizomucor pusillus</i>	Tamil Nadu
PP - 87	<i>Dhanush Kanna B and Dineshkumar K</i>	Computational identification of putative iron-binding proteins of <i>Rhizomucor miehei</i>	Tamil Nadu
PP - 88	<i>Lohitha Ramya. D, Dharshini. Y Dharanika. J, Shyam Edison. S and Sathya. R</i>	Prospects on Biological Removal of chromium from wastewater	Tamil Nadu
PP - 89	<i>Rafudeen. A, Pavitha. B, Jeron Jerold. A, Supriya. J, Tamizhbharathi. J and Sathya. R</i>	Screening of Bio Enzyme from Marine <i>Streptomyces</i> Species	Tamil Nadu
PP - 90	<i>Shakha Sharma and Archit Sharma</i>	Species Composition and Varietal Susceptibility of Mango Leaf hopper on different Varieties of Mango in Jammu Region	Jammu and Kashmir
PP - 91	<i>Johsina. C</i>	Preparation of red wine from paneer rose petals	Tamil Nadu
PP - 92	<i>Jeyasree. J, Deepika. K</i>	Studies on purification and characterization of chitinase from <i>Trichoderma viride</i> N9 and its antifungal activity against phytopathogenic fungi	Tamil Nadu
PP - 93	<i>Jeyasree. J, Durgadevi. S</i>	Anti microbial screening of <i>Euphorbia hirta</i> L. and <i>Petalium murex</i> L. a comparative study	Tamil Nadu
PP - 94	<i>Jeyasree. J and Keerthana. V</i>	Sensitivity patterns of some flowering plants against <i>Salmonella typhi</i> and <i>Pseudomonas aeruginosa</i>	Tamil Nadu
PP - 95	<i>Jeyasree. J, Madhumitha. K</i>	In-vivo toxicological (acute) characterization of bio-synthesized silver nanoparticles in <i>Labeo rohita</i>	Tamil Nadu
PP - 96	<i>Jeyasree. J, Saravanan. V</i>	Antidiabetic and hypolipidemic activity of <i>Brassica oleracea</i> L. leaf in albino rats	Tamil Nadu
PP - 97	<i>Ilamathi. J, Abirami. S, Jeyasree. J</i>	Nutritional Value of <i>Eclipta prostrata</i> and evaluation of its efficacy in rats	Tamil Nadu
PP - 98	<i>Gohila. B and Pragadheeswaran. M</i>	Immunomodulatory effect of Probiotics on Alloxan induced diabetes mellitus fish <i>Channa punctata</i>	Tamil Nadu
PP - 99	<i>Yadram Maharania</i>	Role of <i>Withania somnifera</i> in nerve repair medicine	Rajasthan

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E mail: gopalan@cutn.ac.in**Title: Climate change, Immunology and vector-borne diseases***Natarajan Gopalan and Kamaraj R*

Global climate change might expand the distribution of vector-borne pathogens in both time and space, thereby exposing host populations to longer transmission seasons, and immunologically naive populations to newly introduced pathogens. Where cool temperatures limit malaria parasite development, increases in temperature might enhance malaria transmission and viral replication and the length of the transmission season depend upon ambient temperature. Warm temperatures might intensify or extend the transmission season for dengue fever. Immunologists to examine this interplay between human immunocompetence and vector-borne disease risks in a warmer world. Vector-borne diseases are human illnesses caused by parasites, viruses and bacteria that are transmitted by vectors. Every year there are more than 700,000 deaths from diseases such as malaria, dengue, schistosomiasis, human African trypanosomiasis, leishmaniasis, Chagas disease, yellow fever, Japanese encephalitis and onchocerciasis. The burden of these diseases is highest in tropical and subtropical areas. In past the major outbreaks of dengue, malaria, chikungunya, yellow fever and Zika have afflicted populations, claimed lives, and overwhelmed health systems in many countries. Other diseases such as Chikungunya, leishmaniasis and lymphatic filariasis cause chronic suffering, life-long morbidity, disability and occasional stigmatisation. Climate change has substantial effects on pathogens, vectors, and reservoir hosts, with implications for the health sector worldwide. Many vectors are already expanding their latitude and altitude ranges, and the length of season during which they are active is increasing; these trends are expected to continue as the climate continues to warm. Changes at the local level will be context- and disease-specific. To protect health and equity in a warmer world, investments are needed in vector control with respect to tailoring measures to rapidly emerging situations and in new forms of technology and approaches, including vaccines. The intensify of diseases control efforts, including controlling vectors, diagnosing and treating diseases early, vaccinating, improving water and sanitation systems and other interventions. Efforts are underway to develop short-term vector-borne disease models of sufficient validity to be used in early warning systems, which would prompt timely public health measures to prevent impending outbreaks. Incorporation of a range of intervention scenarios into scenario modelling could help inform optimization of both current and future combinations of interventions that will meet the enduring challenges of prevention and control of vector-borne diseases in the face of ongoing climate change. The "Global Vector Control Response (GVCR) 2017-2030" provides strategic guidance to countries and development partners for urgent strengthening of vector control as a fundamental approach to preventing disease and responding to outbreaks. This re-alignment of vector control programmes is required, supported by increased technical capacity, improved infrastructure, strengthened monitoring and surveillance systems, and greater community mobilization and will support implementation of a comprehensive approach to vector control for disease-specific national and global goals and contribute to achievement of the Sustainable Development Goals and Universal Health Coverage. A crucial element in reducing the burden of vector-borne diseases is behavioural change and improves public awareness to protect from mosquitoes, ticks, bugs, flies and other vectors.

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Title: Autoimmune Kidney Diseases

Immune tolerance refers to the ability of the immune system to recognize 'self' antigens and limit autoimmune responses against the 'self' antigens. This is achieved by both central and peripheral mechanisms. Central tolerance occurs in primary lymphoid organs namely bone marrow and thymus. Peripheral tolerance occurs in secondary lymphoid organs namely lymph nodes and spleen. Breakdown of these tolerance mechanisms results in autoimmune disease. Multiple factors play a role in the breakdown of immune tolerance and development of autoimmunity. These include genetic susceptibility, viral and bacterial infection, drugs etc.

Autoimmune diseases can be organ specific or multisystemic. Kidney involvement may be due to a direct autoimmune attack or as a part of multi system auto immune disease or as collateral damage due to an immune attack on a different system. I will be discussing about a disease in each of the above mentioned categories which include Good pasture syndrome, Systemic lupus erythematosus and systemic vasculitis.

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E mail: prababio@chungbuk.ac.kr**Title: Role of Radiation Therapy (X-ray & C-ion) in treating Cervical Cancer**

Globally, cervical cancer is the third most common cancer among women. It has been shown that human papilloma viruses (HPV), such as HPV-16 and 18 are involved in the development and progression of cervical cancer. The use of radiation therapy (RT) is a very effective method for treating a wide range of tumors, including cervical cancer. The therapeutic implications of overcoming radiation resistance in the treatment of cancer are the biggest threat till date. We are the only research group identified the functional role of Fused Toes Homolog (FTS) in human cancers and documented the central role of FTS in numerous cellular signaling such as Epidermal growth factor receptor (EGFR), Epithelial Mesenchymal Transition (EMT) and Notch signaling. FTS is involved in conferring chemo and radio-resistance in human uterine cervical cancer and a prognostic marker. Further, silencing of FTS combined X-ray/C-ion/cisplatin combination targets the EGFR, Notch signaling in cervical cancer cells. Also, FTS silencing reduced the spheroid formation ability and cancer stem cells markers (Oct4A, Sox2, Nanog). Taken together, our results suggest that FTS is involved in the regulation of X-ray and C-ion irradiation-induced Notch signaling and CSC activation and can be used as a target to increase radiosensitivity in cervical cancer.

Keywords: X-ray; C-ion; Cancer stem cells; Cervical cancer; Fused Toes Homolog; Notch; Radiation.

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Title: HLA in Infectious Diseases

Major Histocompatibility Complex (MHC) is an important gene complex in man. Human Leukocyte Antigen (HLA) molecules involved in the rejection of foreign organs/tissues are highly polymorphic cell surface molecules encoded by the Major Histocompatibility Complex (MHC). The primary biological role of HLA molecules is in the regulation of immune response. In clinical setting the use of Human Leukocyte Antigen (HLA) testing is to match organ of transplant recipients with compatible donors. The leukocyte-agglutinating antibodies (leukoagglutinins) were observed in sera from multiparous women and previously transfused patients. The human MHC maps to the short arm of chromosome 6 (6p.21.3) and spans approximately 3,600 kilobases of DNA. The class-I region of MHC complex contains the classical HLA-A, HLA-B and HLA-C genes and the class II region contains HLA-DR,-DQ and DP genes. MHC class I and class II alleles and linked genetic factors have been shown to contribute considerably to individual differences in susceptibility to a number of pathogens including viruses. HLA-class I and class II alleles are shown to be associated with several diseases such as tuberculosis, leprosy, diabetes, cervical cancer, rheumatoid arthritis, ankylosing spondylitis and a host of other diseases. Further, the HLA genes/ molecules are exploited as drug targets in treatment options for lymphomas. Shared epitopes of HLA molecules are well illustrated as diagnostic markers in autoimmune diseases and cancers. It is possible to predict vaccine candidates based on MHC-HLA-Peptide binding prediction analysis. For example HLA-A2 is a predominant class I allele among all ethnic groups. Recent studies on Covid-19 revealed association of HLA-B*27:07, DRB1*15:01 and DQB1*06:02 alleles in Italian patients and DRB1*08:01 in Sardinian patients. A number of previous studies established strong disease association HLA-DRB1*15:01 and DQB1*02 alleles with tuberculosis in a number of global populations. Similarly, a number of HLA Class- I alleles are shown to be associated with HIV-AIDS infections. Nonetheless, some studies established higher disease resolution in HCV/HIV infections in individuals with HLA-A*03/-B*07 super- typic alleles. HLA- B*35-restricted escape mutants were shown to affect the recognition of CTLs by reducing both peptide binding and T cell receptor recognition and hence HLA- B*35 subtypes are associated with rapid HIV disease progression. HLA alleles, haplotype and extended haplotypes are important molecular targets for studies pertaining to population genetics, disease susceptibility studies donor screening in transplant programmes, therapeutics development and vaccine designing.

Vaccine Pros and Cons: Navigating the Benefits and Risks of Covid-19 Vaccines

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Abstract

Because of the unusual effects of the COVID-19 pandemic, numerous vaccinations have been developed, tested in humans, and approved for use in emergencies. Vaccines are successful in avoiding COVID-19 infection, but they also have certain advantages and disadvantages of their own. The capacity of COVID-19 vaccinations to prevent serious sickness and death is one of its key advantages. Vaccines have been demonstrated to dramatically lower COVID-19 infection-related hospitalization rates and fatalities. They also aid in the endeavour to contain the epidemic as a whole and enable the secure reopening of shops, institutions of higher learning, and other public areas. Yet, some people are reluctant to receive the vaccine due to worries about possible adverse effects. Even while most vaccine side effects are minor, some people may develop allergic responses or problems with their blood clotting. Although recent data suggests that immunizations continue to offer substantial protection against these strains, some vaccine efficacy may decline against emerging viral variations. The price and accessibility of vaccines are possible drawbacks as well. Due to supply chain problems, some nations would have trouble getting vaccines, while others might not be able to pay for them. Misinformation about vaccinations and vaccine reluctance may also result in unequal access to and use of vaccines, which could prolong the pandemic. In conclusion, COVID-19 vaccinations present a potentially effective way to manage the pandemic but also come with hazards and difficulties. To make educated decisions about vaccination, people should speak with their healthcare providers and keep up with the most recent research.

Keywords: COVID-19, Pandemic, Immunizations, COVID-19 vaccinations.

Computational prediction of the effect of mutations in the receptor-binding domain on the interaction between SARS-COV-2 and Human ACE2

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Abstract

The COVID-19-causing SARS-CoV-2 coronavirus is still mutating. Numerous studies have suggested that this viral mutation, specifically in the receptor-binding domain area, may boost the viral affinity for the receptor for viral entrance into host cells, human angiotensin-converting enzyme 2 (hACE2), hence increasing viral virulence and transmission. In this study, we evaluated the binding affinity of SARS-CoV-2 variants (Delta plus, Iota, Kappa, Mu, Lambda, and C.1.2) on hACE2 using computational modelling with a protein-protein docking technique. According to the simulation results, there were differences in the interactions between the RBD and hACE2 that included hydrogen bonding, salt bridge interactions, non-bonded interactions, and binding free energy differences among these variations. Molecular dynamics simulations revealed mutations in the RBD increase the stability of the hACE2-spike protein complex compared to the wild type, following the global stability trend and boosting the binding affinity. All mutations in the spike protein was increased the contagiousness of SARS-CoV-2 variants, according to the binding-free energy value determined using molecular mechanics/Poisson-Boltzmann surface area (MM/PBSA) calculations. The findings of this study could provide a foundation to develop efficient interventions against these variations.

Keywords: SARS-CoV-2, Receptor-binding domain, Spike, hACE, Mutation, *In Silico*

The immunological role of B7- HA in pregnant women with SARS-COVID Infection

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Abstract

T-cells are key players in fighting the coronavirus disease 2019 (COVID-19). The checkpoint molecule B7-H4, a member of the B7 family, can inhibit T-cell activation and proliferation by inhibiting NF-kb expression. We aimed to elucidate the immunological role of soluble B7-H4 (sB7-H4) and B7-H4 in pregnant women suffered from an acute Sars-Cov2 infection. Expression levels of sB7-H4 and cytokines were detected by enzyme linked immunosorbent assay. sB7-H4 and cytokines mRNA expression was analyzed by qPCR, and B7-H4 and NF-kb (p65) protein levels were investigated by western blot and immunofluorescence staining in placenta chorionic villous and decidual basalis tissues of COVID-19 affected women and healthy controls. Fibrinoid necrosis in the periphery of placental villi was increased in the COVID-19- affected patients. sB7-H4 protein in maternal and cord blood serum and IL-6/IL-10 were Increased while leukocytes were decreased during SARS-COV-2 Infection. Serum sB7-H4 level was increased according to the severity of SARS-CoV-2 infection. Cytokines (IL-6, IL-18, L-1 β , TNF- α), B7-44 mRNA and protein in the decidual basalis tissues of COVID-19-infected pregnant women were significantly increased compared to healthy controls. IL-18 and L-1 β were significantly increased in the placenta chorionic villous samples of COVID-19 affected patients, while NF- kb (p55) expression was decreased. The expression of the immunological marker sB7-14 correlated with the severity of COVID-19 disease in pregnant women, sB7-H4 and B7-44 can be used to monitor the progression of COVID-19 infection during pregnancy, and for evaluating of the maternal immune status.

Keywords: B7-H4; SARS-COV-2 T-cells; immune regulation; infection; pregnancy.

Potential antiviral peptides targeting the SARS-CoV-2 spike protein

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Abstract

A public health emergency was generated by the coronavirus illness brought on by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections. The viral infection process is started when the viral Spike glycoprotein binds to the human cell receptor ACE2. It is thought that the creation of effective coronavirus illness treatments is crucial. The receptor-binding domain (RBD) of the SARS-CoV-2 spike protein was targeted with an amino acid peptide inhibitor using an in silico method. The proposed inhibitor (SARS-CoV-2 PEP 49) is made up of amino acids with the helix of 1 and the sheets of 4-5 of ACE2. The 3D structures of the peptide amino acids were made using the web application PEP-FOLD3. Two areas of ACE2—the 1 helical protease domain (PD) and the 4 - 5 sheets - were found to contain the interacting amino acids when the interaction between ACE2 and the RBD of the Spike protein was examined for three protein data bank entries (6M0J, 7C8D, and 7A95). The SARS-CoV-2 PEP 49 model may be beneficial as a potential RBD binding blocker, as revealed by the molecular docking analysis of the proposed inhibitor, which shows that SARS-CoV-2 PEP 49 connects directly to the Spike protein's ACE2 binding site with a binding affinity larger than ACE2.

Keywords: Molecular docking, COVID-19, Peptide blocker, ACE2, Spike protein, SARS-CoV-2

Current Review of the SARS-CoV-2 Omicron Sub variant BF.7 (BA.5.2.1.7) Virology and Preventing Strategies

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Abstract

Since its identification in late 2019 the novel corona virus, severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) In Wuhan, China, by the World Health Organization (WHO), which cause the corona virus disease 2019, it is rapidly spreading resulting in the global pandemic. As of 19 December 2022, a total of 64 million (649,038,437) confirmed cases including 6,645,812 deaths have been reported across the world. Over time, the SARS-CoV-2 acquired genetic mutations resulting in multiple types of SARS-CoV-2 variants and sub variants that have been confirmed. The Omicron (B.1.1.529) variant was identified later in November 2021, with enhanced immune escape and was followed with various sub lineages BA.1, BA.2, BA.3, BA.4 and BA.5 and Other sublineages BQ.1, BQ.11, BF.7, BA.2.75, and XBB due to mutations in the spike protein of the SARS-CoV-2. In response to the current surge in the COVID-19 reports by Omicron sub variant BF.7 also known as BA.2.75.2, in China and other countries, triggering global alarm. The present review was conducted to understand the virology, factors associated with increased transmissibility with BF.7 and possible urgent preventing strategies to be taken to curtail the novel omicron variants outbreak across the world.

Keywords: SARS-CoV-2, Wuhan

Survey on awareness among people about immunity increasing ingredients of kadha

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Abstract

The novel coronavirus (SARS-CoV-2) has spread to more than 205 countries since it emerged in Wuhan, China in December 2019. Vaccination has not been proven to prevent covid-19, but strong immunity can help you recover faster and be healthier. Some people have good immunity, but others have supplemented it with multivitamins and homeopathic remedies. Some people do yoga and exercise regularly to strengthen their immunity. Ways to strengthen immunity are Ayurvedic herbs such as turmeric, ginger, tulip, lemon, clove, cinnamon, black pepper, jiroi. Many people drink herbal kadayif and green tea to strengthen their immunity.

Keywords: Immunity, kadha, ayurvedic drink

Comparative study of vaccinations in sangli and Kolhapur district of western Maharashtra

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Abstract

Western Maharashtra has the highest number of active Covid-19 cases in the state despite vaccinations being maximum in that region. The state has 1.61 lakh active cases at present, a majority of which are from the western districts. Pune has the highest number of 19,275 active cases, while Kolhapur has 17,822 patients. Satara and Sangli districts have 11,232 and 9,855 active cases, respectively. These are the same districts that have vaccinated the highest percentage of their populations, according to data available with Maharashtra's health department. A total 2.46 corer people have been vaccinated in Maharashtra so far. Kolhapur has achieved 66.64 per cent vaccination, which is the highest in the state. This paper aims to analyze the to analyze total vaccination Age- wise vaccination, preference of vaccine in Kolhapur and Sangli district.

Keywords: Vaccination, Covishield, Covaxin, Sputnik V

Comparative analysis of covid vaccines

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Abstract

There are several COVID-19 vaccines validated for use by WHO, they are Pfizer, COVISHIELD, AstraZeneca, Janssen, The Moderna COVID-19 vaccine, Sinopharm COVID-19, Sinovac-Corona, COVAXIN, Covovax, Nuvaxovid. As of March 2023, India has administered over 2.2 billion doses overall, including first, second and precautionary (booster) doses. 74 percentage of the Indian population has received one dose. 69 percentage of the Indian population has received both doses. Over 80 percentage of the population of India have a positive response for getting anti covid shots. A total of 617 serious adverse events were reported, of these, 180 cases resulted in death. The Immunization Technical Support Unit at the federal health ministry examined 192,000 case reports, including 12,400 deaths. In more than half of the examined cases of death, the cause of death was found to be acute coronary syndrome. India has one of the lowest vaccine hesitancy in the world. In the present study we comparative analysed the covishield and covaxin.

Keywords: Sinopharm COVID-19, Sinovac-Corona, COVAXIN, Moderna

Medical Plants Show Promising Results in Reducing COVID-19 Infections

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Abstract

The Northeast region of India is renowned for its rich diversity which includes variety of medical plants with antimicrobial properties. These plant can be used to fight against disease and illnesses caused by bacteria, fungi and viruses. In recent time these plant have been identified as potential weapons against the noval coronavirus (Covid 19) by using these powerful compound present in these medical plants like as Terpenoids Alkaloids and Phenolic chemicals are only a few of the active ingredients (secondary metabolites) that are thought to be responsible for the pharmacological activities of plant that could be therapeutics or preventative. These metabolites and there analogous have been found to have antiviral antiinflammatory, and antioxidants therapeutic properties. Additionally, the inhibitory efficacy of number of these plant secondary metabolites against SAR-COV has been evaluated. To treat covid 19 infection on symptoms like as Fever Tanacetum parthenium, Sutherlandia frutescens. Pain and inflammation Houத்துynia cordata, Sambucus nigra. Including as digestive cardiac and respiratory issues, medical plant may also be employed. Some medical herbs have been previously investigate for there capacity to alleviate particular provoked symptoms that appear in covid 19 infection. The release of immense amount of proinflammatory cytokines and chemokines play a key role in covid 19 development. According to studies, these medical herbs could be used as pre and post exposure preventing treatment for Covid 19 since they have been to show to boost the activity and quantity of inflammatory suppressor lymphocytes natural killer cells and macrophages. Thus it is crucial to raise awareness of the uses of medical plants that can help to manage covid 19 pathogenesis. According to scientific evidence of beneficial immunomodulatory properties, this review emphasis the necessity for the investigation of plant based medicines that have prove successful in combating covid 19.

Keywords: Covid 19, Medical plants, Symptoms, macrophages, Pathogenesis, infections, Awareness

Identification of exosomal miRNA in pulmonary tuberculosis patient using Real Time PCR method

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Abstract

In recent decades, exosomes have been suggested as excellent source for both diagnostic and prognostic markers for many malignant and infectious diseases. Exosomes have a diverse range of functions, which depends on both the cell origin and the physiological state of the originating cell, and include eradicating unwanted proteins, transfer of genetic material between cells, immunostimulatory and immunosuppressive functions, as well as the promotion of metastasis and spread of infectious agents. The molecular content of exosomes has a large diversity of RNA, both miRNA and mRNA, with the exosomal mRNA content differing substantially from the mRNA profile of the donor cells. Limited information is available about the expression profile of miRNAs in exosomes of TB patients, this study reveals to show the expression of exosomal miRNA in pulmonary tuberculosis patients, TB patients and highlights that hsa-mir-7-5p have the ability to distinguish significantly active.

Keywords: Pulmonary tuberculosis, RT-PCR, miRNA

Conventional phenotypic modalities to detect extended spectrum beta lactamases in urinary tract infections

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Abstract

A urinary tract infection affects the urinary system that is composed of the kidneys, ureters, bladder and urethra. Any part of the urinary system can become infected, but most infections involve the lower urinary tract the urethra and the bladder. Gram negative aerobic bacteria cause most bacterial UTIs. *E.coli* causes most of the community-acquired UTIs in all age groups. The other gram-negative species, *Klebsiella*, *Proteus*, *Enterobacter* and *Serratia* and the gram-positive bacterial cocci, *Enterococcus faecalis* and *S.saprophyticus* and *S.aureus* also causes urinary tract infections. Extended Spectrum - Beta Lactamases (ESBLs) are plasmid mediated, TEM and SHV derived enzymes, first isolated in Western Europe in mid 1980s, most commonly in *Klebsiella* species, followed by *Escherichia coli*. These enzymes are capable of hydrolyzing broad spectrum cephalosporins and monobactams but inactive against cephamycins and imipenem. These ESBLs are inhibited by clavulanic acid and these clavulanic acid -inhibitory ESBLs belong mostly to class-A of the Ambler classification scheme and have been extensively reported in members of the family Enterobacteriaceae. (Chaudhary *et al.*, 2004). Identifying organisms that are ESBLs is a major challenge for the clinical microbiology laboratory. The present work is focused on the detection of ESBL producing clinical isolates of *E.coli* and *Klebsiella* species from UTI patients using conventional methods. It is further extended to determine the CTX-M-1 mediated ESBL production in the isolates. The routine diagnosis of ESBL producing organisms should be done in hospitals, coupled with prudent use of antimicrobials to reduce the propagation of multi - drug resistant and ESBL - producing organisms.

Keywords: UTI, E.Coli, ESBL, Cephalosporins, *Klebsiella*, clavulnic acid, lactam ring, enterobacteriaceae.

Multi-epitope vaccines: A novel strategy for development of vaccine against infectious diseases

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Abstract

Infectious diseases are communicable diseases caused by invasive pathogens like bacteria, viruses, fungi, or parasites. Infectious diseases have a terrible impact on a nation's economy and pose a serious health and financial burden, keeping people in poverty and eroding community resilience. Due to the development of drug resistance and mutations in the pathogens, the development of prophylactic vaccines against infectious diseases has been focused on combating them. Traditional vaccines against infectious diseases were based on live or attenuated pathogens or their subunits, but they have numerous drawbacks. To address this issue, computational biology, or bioinformatics, has been used in vaccine design, which may significantly decrease the duration and expense. Immunoinformatics and in-silico epitope prediction may now be a potential way to develop the best vaccine candidate, which includes immunodominant epitopes of various antigenic proteins. A polyepitope vaccine will be constructed, comprising cytotoxic T-cell lymphocytes (CTL), helper T-cell lymphocytes (HTL), and interferon-gamma (IFN-)-inducing epitopes. In addition, various physicochemical, allergenic, and antigenic profiles will be evaluated to confirm the immunogenicity and safety of the vaccine construct. Molecular interactions, binding affinities, and the thermodynamic stability of the vaccine construct will be examined through molecular docking and dynamic simulation approaches to identify a stable and strong interaction with Toll-like receptors (TLRs). Further, in silico immune simulations will be performed to assess the immune-response triggering capabilities of the vaccine. This immunoinformatic analysis suggests that the proposed vaccine candidate would be capable of generating an effective immune response to combat infectious diseases.

Keywords: Infectious diseases, prophylactic vaccines, cytotoxic T-cell lymphocyte, Helper T-cell lymphocyte, Toll-like receptors

In Silico Analysis and Homology modelling of unstructured protein of malaria

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Abstract

Parasites of the genus Plasmodium cause a great deal of morbidity and mortality worldwide, largely in regions with limited access and indication to the tools necessary to control mosquito's population and to treat human infection of malaria. Five species of this class of eukaryotic pathogens cause different human disease with Plasmodium falciparum alone infecting approximately 500 million people per year and resulting in approximately one million deaths. The present article is dedicated to Physiochemical and homology modelling characterization studies have been conducted to predict the condition suitable for the stability and purification of these proteins and to predict their structural properties. The outcomes of these studies have provided important preliminary data for the drug discovery pipeline project. Here using in silico physiochemical and Homology modelling tools, We have reported the primary, Secondary and tertiary structural characteristics of human malaria protein.

Keywords: *Malaria, insilico*, Plasmodium and homology modelling.

Detection of Hypersensitivity Reactions Producing Mycotoxins from Patients who Attending Tertiary care Hospital

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Abstract

Fungi can be found throughout the world, indoor as well as outdoor environment. In contrast to pollen, fungal spores and/or mycelial cells are responsible to cause Hypersensitive reactions like Allergic Bronchopulmonary Mycoses, Allergic Sinusitis, Hypersensitivity Pneumonitis, Allergic Rhinitis, Allergic Asthma and Atopic Dermatitis among individuals. The most common toxins are Aflatoxin, Ergot alkaloids, Ochratoxins and Trichothecenes. To determine the mycotoxins could be extracted and identified in human tissue and other body fluids from patients exposed to toxin. About 75 samples like serum, urine, extracted tissues and sputum samples were examined and screened under a novel method of Ultrafast liquid chromatography connected with tandem mass spectrometry (UFLC-MS/MS) assay. All the 75 samples were screening for the presence of Mycotoxins, among that 42 (32%) samples shows the significant levels of detection for the various mycotoxins varied from 0.2 ppb for trichothecenes, 1.0 ppb for aflatoxins, and 2.0 ppb for ochratoxins. Serum, urine, sputum, and tissue biopsies (lung, liver, brain) from undetectable (<0.2 ppb) to levels up to 18 ppb varied in Trichothecene. About 1.0 to 5.0 pp band 2.0 ppb to > 10.0 pp bvariation were shown in Aflatoxin and Ochratoxins levels respectively. Mycotoxins were not detectable in their tissues or fluids for negative control patients. Environment induced molds are the major cause, explores the patients exposure and detection level of various mycotoxins from various clinical samples. Urine sample is the most predominant sample to screening qualitative test of mycotoxins, which can assist the physician to determine the best mode of therapy against the mycotoxins.

Keywords: Hypersensitive reactions, Mycotoxins, UFLC-MS/MS

Study of brucellosis in cattle's of Uttar Pradesh

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Abstract

Brucellosis is one of the most prevalent zoonotic illnesses in cattle. According to WHO, it is also one of the most neglected tropical diseases in the world. India is an agricultural nation with the greatest cattle population in the world. Livestock contributes significant portion in GDP of India. But due to lack of education and awareness, the health of cattle's is mostly ignored by cattle keepers, which results in major economic loss. Brucellosis is a zoonotic disease, which is transmitted by gram-negative coccobacilli belonging to the genus *Brucella*. The disease is directly transmitted to humans by ingesting raw or unpasteurized milk and poor farm hygiene practices. Cattle keepers should wear protective gloves when handling sick animals to prevent the spread of disease. It primarily affects the reproductive organs of cattle, causing infertility, abortion, delayed heat, orchitis in males, and decreased milk and meat output. It also has significant effect on the human physiology. Brucellosis is well known as Mediterranean fever, Malta fever, and undulant fever in human. There are numerous *Brucella* species that infect various hosts. *Brucella abortus* commonly infects cattle and buffalo. The distribution of brucellosis is worldwide, but it is most frequent in Asia, the Mediterranean, the Middle East, Latin America, and Africa. The purpose of this study is to evaluate the Knowledge, Attitude and Practices (KAP) of cattle keepers from Jalaun district of Uttar Pradesh. The current survey indicates that the KAP related to brucellosis (nature, mechanism of transmission, prevention, vaccination etc.) among cattle keepers is significantly low. Mass vaccination is crucial to eradicate brucellosis, but due to a lack of awareness about freely available vaccines and the large number of cattles, it is a difficult task to vaccinate every single calf. Strain 19 and RB51 are the strains of authorized *B. abortus* vaccines most frequently used to protect cattle from infection and abortion.

Keywords: Brucellosis, Zoonotic, Vaccination

Rheumatoid arthritis: a systemic autoimmune disease and its diagnosis

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Abstract

The immune system is a complex and highly developed system, yet its mission is simple: to seek and kill invaders. If a person is born with a severely defective immune system, death from infection by a virus, bacterium, fungus or parasite will occur. In severe combined immunodeficiency, lack of an enzyme means that toxic waste builds up inside immune system cells, killing them and thus devastating the immune system. *Rheumatoid arthritis* (RA) is a chronic inflammatory disease affecting the joints. It occurs in 0.5-1% of people in the Western world, predominately women between 30-50 years of age, and has a high familial association. The disease leads to decreased life expectancy and increases morbidity amongst sufferers. Although the aetiology of the disease is unknown, there are a number of environmental and genetic risk factors associated with disease incidence (smoking, obesity, vitamin D deficiency, changes in the microbiota, HLA type, etc.). Once the disease is triggered, immune cells migrate into the joints where they produce large quantities of immune mediators (cytokines/chemokines) leading to the activation and recruitment of more immune cells into the tissue. For example, antigen-presenting cells interact with T cells to cause production of immune mediators which activate more cells, e.g. T and B cells. B cells produce self-reactive antibodies to immunoglobulin G (IgG) which can be used as diagnostic and prognostic markers. In recent decades, we have obtained new genetic and pathogenetic insights along with new developments in RA disease assessment and therapeutic strategies, which have led to the approval of a variety of novel therapies.

Keywords: *Rheumatoid arthritis*, Inflammation, HLA, T Cells, B Cells, Markers

Type 1 Diabetes: Immune mechanism and therapeutic strategies

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Abstract

Type 1 and type 2 diabetes mellitus (T1D, T2D) have in common high blood glucose levels (hyperglycemia) that can cause serious health complications including ketoacidosis, kidney failure, heart disease, stroke, and blindness. Patients are often diagnosed with diabetes when they see a physician for clinical signs such as excessive thirst, urination, and hunger. These symptoms result from the underlying hyperglycemia that is in turn caused by insufficient insulin functionality. Type 1 diabetes (T1D) is a chronic autoimmune disease in which destruction or damaging of the beta-cells in the islets of Langerhans results in insulin deficiency and hyperglycemia. Efficacious prevention of T1D will require detection of the earliest events in the process. So far, autoantibodies are most widely used as serum biomarker, but T-cell readouts and metabolome studies might strengthen and bring forward diagnosis. Current preventive clinical trials mostly focus on environmental triggers. Therapeutic trials test the efficacy of antigen-specific and antigen-nonspecific immune interventions, but also include restoration of the affected beta-cell mass by islet transplantation, neogenesis and regeneration, and combinations thereof. Current immune suppressive drugs can also interfere with beta-cell function. More specifically, rapamycin (sirolimus) impairs engraftment, interferes with angiogenesis, induces insulin resistance, and inhibits β -cell replication. Rapamycin also, like corticosteroids, tacrolimus, and MMF, decreases insulin transcription. So, the current study focuses on the immune mechanism and therapeutic strategies of type I diabetes.

Keywords: Type I Diabetes, Islets of Langerhans, Autoantibodies, Rapamycin, Insulin

Review on: Role of Vitamin C as Immunity Booster in Cancer and Infectious Diseases in Humans

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Abstract

Vitamin C containing fruits called as citrus fruits are easily available in Indian market and are rich source of vitamin-C, minerals required for proper development of human health. Richest source of ascorbic acid includes fruits like orange, kiwi, grapes, lemon, strawberry, guava and gooseberry. Deficiency of vitamin C causes scurvy, weakness in connective tissues. Ascorbic acid work as capping reagent in formation of nanomaterials from plant extract. It is useful in preparation of chemicals and enzymatic reagents. It is one of powerful antioxidant and has detoxifying properties with gene regulatory enzymes. It also maintains oxidation- reduction mechanism and help in synthesis of collagen to make skin tight and strong. Vitamin C when present in high concentration in body act as pro-oxidant that inhibit skin disease and cancer cell growth in oral, cervical, lung, gastric regions in body of human. Vitamin C shows efficient role in biochemical and molecular mechanism in cancer disease when taken with chemotherapy drugs. Infectious diseases related to gastric and stomach is due to *H. Pytoripathogens* that causes peptic and gastric ulcers. Vitamin C is effective in decreasing blood glucose and lipid in patient suffering from type 2 diabetes. This review revels on importance citrus fruits as efficient immune defense and its role as antidiabetic, anticancer, and treatment of inflammation in skin diseases.

Key words: Antioxidant, Anticancer, Citrus fruits, Infectious diseases

An innovation of hydrogel injection to repair spontaneous CSF leak

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Abstract

Cerebrospinal fluid (CSF) is a clear liquid that surrounds the brain and spinal cord. Cerebrospinal fluid functions to protect the brain and spinal cord, transport nutrient and hormones to the cell and remove waste products, it acts as a cushion for the brain inside the skull. CSF helps to keep the brain and spinal cord healthy by delivering oxygen, glucose, electrolyte, removing metabolic wastes and helps to maintain a constant pressure around the brain and spinal cord. Experts estimate that about 90% of CSF leaks happen because of injuries. The rate of spontaneous CSF leak repair has risen 2 fold from 2012 (488 cases per year) to 2019 (857 cases per year). Most common CSF leak cases are rhinorrhea and otorrhea. Most of the possible tests for CSF leak is imaging test, a way to look inside the detection and locate possible leaks or damage. Other methods are detection by CT scan, MRI scan and cisternography. There is no direct treatment for spontaneous CSF leak. Surgery is a common method to repair CSF leak. Some surgeries may go through open skull to access a leak through the nose or mouth. In early stage, it can be easily repaired by blood patch injection, where blood is slowly injected into the CSF surroundings. In cases of large leak hole (late detection), only open skull surgery is the method to repair the leak. For this type of sCSF leak, we propose an idea to overcome this problem, which will effectively replace the open skull surgery. For sCSF leak, we use hydrogel injection to repair the leak. Hydrogel is totally soft for stable adhesion to brain and permeable to body fluid for long term use. Hydrogel is totally organic for MRI compatibility. It also overcomes the problems such as it may cause abscesses and meningitis of a person who has undergone surgical repair. Using hydrogel injection is cost effective than surgical methods and hydrogel approach presents less risk than traditional open skull surgery.

Keywords: cerebrospinal fluid (CSF), hydrogel injection, sCSF leak, open skull surgery, Blood patch injection, surgical repair.

The role of diagnostic and antimicrobial stewardship in the implementation of rapid molecular infectious disease diagnostics

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Abstract

New rapid molecular diagnostic technologies for infectious diseases allow for more accurate microbiological diagnoses to be made more quickly. However, diagnostic and antimicrobial stewardship are required to ensure that these technologies conserve, rather than consume additional health care resources and have the greatest possible impact on patient care. Diagnostic stewardship is required to implement appropriate clinical tests and direct testing towards appropriate patients. Antimicrobial stewardship is required to ensure prompt appropriate clinical action in order to translate faster diagnostic test results in the laboratory into improved bedside outcomes. The roles of diagnostic and antimicrobial stewardship in the implementation of rapid molecular infectious disease diagnostics are discussed in this mini review.

Keywords: Infectious Disease, Antimicrobial

Immunology of infectious diseases

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Abstract

Immunology is the study about the immune system, which is responsible for protecting the body against the pathogenic diseases. The immune system has two types of immunity: innate immunity and adaptive immunity. Pathogens are causative organisms of infectious diseases. Pathogens like viruses, bacteria, fungi, and nematodes. These pathogens enter the body through mechanical or wounds and environmental factors and cause harmful activities. When a pathogen enters the body, the immune system recognizes the foreign particle and responds to eliminate or kill it. Immune response depends on the type of pathogen and location of the infection. But this response is mediated by different components of the immune system, including WBC such as T cells, B cells, and macrophages. Here T cells are responsible for identifying and eliminating the cells and B cells are producing the antibodies (proteins) which are useful for recognition and binding of pathogens. Macrophages are also one type of white blood cells that can engulf and destroy the pathogen. In addition, the immune system depends on some signaling molecules such as cytokines. Finally, immunology of infectious diseases is a complex and dynamic active research field. Understanding the immune response and discovering the effective vaccines to cure different infectious diseases.

Keywords: Immunology, Immune Response.

Effect of STING protein in cancer

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Abstract

The innate defense, the first wall of natural defense, plays an important role in anti-tumor immunotherapy so the detection of foreign particle or pathogen should be detected rapidly by which the defence mechanism of host works efficiently and any infection could not be harmful to the host. STING is an important mediator that binds cytoplasmic nucleic acid ligands to type I interferon responses. Its main role is to connect many cellular pathways that ultimately lead to the activation of the immune system against disease. Thanks to its complex mechanisms, the cGAS-STING pathway stimulates the release of various cytokines and chemokines that play a key role in combating and maintaining overall immune homeostasis. Several STING agonists have been identified and used in clinical or clinical trials for the treatment of cancer. Recent evidence suggests that the STING pathway plays a role in the action of anti-inflammatory drugs. Therefore, STING agonists are now being developed as a new class of cancer therapy. However, little is known about the effect of activated STING-mediated signaling in cancer cells on the efficacy of antitumor therapy. Activation of the STING-based pathway in cancer cells has been shown to impair the body's ability to kill tumors and alter the immune system. Understanding the function of the STING pathway in cancer will provide important information for developing effective treatment strategies.

Keywords: STING, Cancer, homeostasis

A Study on Anticancer activity of *Zizyphus Spina Christi* (Christ's thorn) Silver Nanoparticles on Skin Cancer Cell line

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Abstract

Bionanotechnology has emerged up as integration between biotechnology and nanotechnology for developing biosynthetic and environmental friendly technology for synthesis of nanomaterials. Silver has been known to have effective medicinal properties for centuries. Due to the presence of bioactive compounds in the selected plant leaves was used to Silver nano particle synthesis for enhancing the biological activity for Skin cancer cell line. The ZSAgNPs exhibited dose-dependent toxicity in the A431 cell line, with an IC₅₀ of 51.56 µg/mL arresting cell growth. The MTT assay revealed maximum inhibition of cell growth of cancer cells and cyto toxicity occurs at the minimum concentration of ZSAgNPs. The study revealed that synthesized silver nanoparticles have a significant effect on inhibiting the growth of Skin cancer cells. This further study will be examined the effects of the synthesized Nano particle for various skin diseases by *Invivomethod* for Pharmaceutical and Cosmeceutical applications.

Keywords: *Zizyphus Spina Christi*, Silver Nitrate, A431 Cell line, MTT

A Study on anticancer activity of *Parmotrema perlatum* (lichen) with liver cancer (HepG-2) cell line

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Abstract

Lichen was playing an important role in health and disease prevention. These important lichens aspects such as medicine, and foods for commercial purpose. The present study shows that the *Parmotrema perlatum* has increasingly high nutritional value and antioxidant activity is present against cancer diseases. The phytochemical analysis carried out on the *Parmotrema perlatum* lichen extract revealed the presence of medicinally active constituents. Results indicated that probably the higher amount of phenolic compounds in the lichen extracts are responsible for encouraging antioxidant properties. These medicinal bioactive compounds may have a significant inhibitory effect on various cancer cell lines. The mechanism of liver anticancer action of lichen inhibit (95%) of viability of liver cancer cells. Hence the selected *Parmotrema perlatum* lichen possessed significant anticancer activity against liver cancer. The further study will be carried out for isolation of bioactive compounds which is responsible for liver cancer for Pharmaceutical applications.

Keywords: *Parmotrema perlatum*, Phenolic compounds, , Antioxidant, Cancer, Hep G 2

Effect of l-dopa from traditional pigmented rice (*illupaipoo samba*) for parkinson's diseases

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Abstract

The study intended to analyse the effect of Levodopa from the selected traditional rice Illupaipoo Samba for Parkinson Disease cell line. The compound Levodopa was isolated by TLC with Standard drug. The rice sample inhibit the growth of SHSY5Y (Parkinson cell line) 91% at 50 µg/ ml concentration. So, this study revealed that levodopa in the rice which is used to treat Parkinson's disease The further study will be isolated L dopa from the rice varieties to be characterized and its effects will be examined by the *invivo* using animal model for Nutraceutical and Pharmaceutical applications.

Keywords: Traditional Rice, Illupaipoo samba, Levodopa, Parkinson Disease, SHSY5Y cell line

Camphene inhibits mutant BRCA1 and BRCA2 genes in breast cancer

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Abstract

Ipomea carnea belonging to Convolvulaceae family has been reported to have various medicinal values. The plants parts are reported to have various pharmacological activities such as antimicrobial, antioxidant, anti-inflammatory, antiinsecticidal, anticancer, antimetastatic, antiproliferative and antitumor properties. The methanolic leaf extracts of *Ipomea carnea* were quantifies for their phytoconstituents and known to have higher amount of phytoconstituests. The methanolic leaf extract of *Ipomea carnea* was subject to the GCMS study and the phytoconstituents were profiles with their specific retention times. The top compound camphene was docked against BRCA1 (PDB ID: 1JNX), BRCA2 (PDB ID: 1MJE) which showed that the binding affinity is strong with binding energies -4.6 Kcal/mol and -7.1 Kcal/mol respectively. Also, the lead compound has passed the drug likeness by Lipinski's rule of five and the ADME properties. Furthermore, it also shows significant cytotoxic potential in MTT assay with IC50 concentration of the sample was nearer to the 60 µg/ml. *Ipomea carnea* can be explored more in future to evaluate its medicinal properties.

Keywords: BRCA1, BRCA2, Camphene, molecular docking, GCMS, anticancer

Recent Research in the Diagnostic and Treatment of Parkinson's Disease

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Abstract

Parkinson's disease (PD), a neurodegenerative disease affecting dopaminergic (DA) neurons, is characterized by decline of motor function and cognition. Dopaminergic cell loss is associated with accumulation of toxic alpha synuclein aggregates. The mechanisms underlying neurodegeneration in PD are not well understood, but genetic, pathological and biochemical evidence suggest that alpha synuclein (α -Syn) plays a central role. According to the Movement Disorder Society (MDS), subjective cognitive complaints (SCC) are diagnostic criterion for PD-mild cognitive impairment (PD-MCI); however, studies often do not incorporate SCC when classifying PD-MCI. This inconsistent use may reflect mixed findings regarding the association between SCC and objective measures of cognitive impairment. Our study aimed to describe the extent that inclusion/ exclusion of SCC affects the occurrence of PD-MCI, and if the inclusion of SCC is associated with faster cognitive decline and cerebrospinal fluid markers (CSF) of alpha-synuclein, amyloid beta, total tau, and phosphorylatedtau. Development of severe cognitive impairments in the form of Parkinson's disease dementia (PDD) is seen in 83% of PD patients within 20 years of disease duration. Altered gene expression related to Parkinson's disease (PD) has not been described in the living brain, yet this information may support novel discovery pertinent to disease pathophysiology and treatment. This study compared the transcriptome in brain biopsies obtained from living PD and Control patients, RNA sequencing Transcriptome Neurodegeneration Deep brain stimulation Bioinformatics, The comprehensive literature review yielded 7 RNA-Seq datasets generated from blood, skin and cadaveric brain but none from a living brain source. From the current dataset, 123 DEGs were identified only within the living brain and 267 DEGs were either newly found or had distinct directional change in living brain relative to other tissues.

Keywords: Parkinson's disease, Health administrative data, Diagnostic code, Validation Incidence

Evaluation of anti-oxidant activity of *Syzygium cumini* in Parkinson disease using *Drosophila* as a model organism

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Abstract

PD is a multifactorial disorder that includes both genetic and environmental factors, which affect multiple signaling pathways in different cell types. Characteristic feature of PD is neuroinflammation that involves pro-inflammatory factors like IL-6, IL-1 beta, nitric oxide, TNF-alpha which is controlled by microglia cells. Activated innate immune glial cells induce inflammatory response provide protection against invasion of foreign antigen or tissue damage. Expression of several Toll-like receptors (TLRs), which are responsible for initiating the inflammatory response, has been observed in post-mortem PD brain samples. Moreover, TLR4 has been implicated in the abnormal deposition of α -synuclein, a protein that accumulates in brain cells of PD patients. Immune dysfunction also leads to PD. Over the decades cellular and molecular mechanisms of *Drosophila melanogaster* with humans are highly conserved. In *Drosophila*, the innate immune response to bacterial and fungal pathogens is mainly controlled by two signaling cascades, the Toll and the immune deficiency (IMD) pathways, both of which activate members of the Nuclear Factor kappa B (NF- κ B) family of transcription factors. Toll pathway primarily responds to infections with fungi and Gram-positive bacteria, while the IMD pathway is predominantly activated by infection with Gram-negative bacteria. *Syzygium cumini* also known as Java plum, Black plum, Jamun, Jambolan belongs to Myrtaceae family. It contains a variety of properties including anti-oxidant, anti-microbial, anti-inflammatory, anti-diabetic etc. *Syzygium cumini* seeds possess immunomodulatory activity by stimulating both cell mediated and humoral immune responses. *Syzygium cumini* contains a good amount of phytoconstituents like anthocyanins, flavonoids, phenolic acids, tannins, terpenes. It acts as cardiometabolic agents that scavenge reactive nitrogen or oxygen species and stimulate anti-oxidant defense. In the present study, anti-oxidative and anti-inflammatory effect of *Syzygium cumini* in *Drosophila* were analysed, it showed that it is helpful to reduce oxidative stress and enhance immunological response by increasing the level of anti-oxidant enzymes like SOD, Catalase, GSH. Hence it may conclude that *Syzygium cumini* have anti-oxidative and immunological properties.

Keywords: Parkinson disease, *Drosophila*, anti-oxidant, anti-inflammatory.

Advances in molecular epidemiology of infectious diseases: A review

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Abstract

Molecular epidemiology is a discipline of epidemiology developed by merging molecular biology into epidemiological studies. The discipline of epidemiology focuses on human and animals. Infectious disease epidemiology deals disease occurrence and distribution in time and place and pathogen and host-related biological factors that influence transmission. Molecular epidemiology happens to use the tools of molecular microbiology to yield data that can be analyzed by observational and experimental techniques. The range of infectious disease epidemiologic issues that can be addressed by the application of molecular microbiology tools depends on the types of information that can be generated by the tools. Various types of epidemiological issues can be analyzed by the electrophoretic technique and also Polymerase Chain Reaction (PCR) technology and sequencing of nucleic acid technology widen the range of investigative opportunities. This abstract discuss the varieties of epidemiologic issues of infectious disease addressable by molecular epidemiology methods.

Keywords: Epidemiology, Infectious Disease, Molecular Microbiology, Electrophoresis, Polymerase Chain Reaction

Evaluation of anti-asthmatic activity of *Achyranthes aspera* linn root extract

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Abstract

Asthma in chronic condition is very tedious to cure and which is very common disease. The aim of study was to evaluate anti-asthmatic activity root part of *A. aspera*. Collection of root part of is done from Rahata District Ahmednagar (Maharashtra). For authentication of of *Achyranthes aspera* *A. aspera* Herbarium of plant was made and sent to Biological Survey of India, Pune. The collected material was proceeded for air dry at 35-40° C and then it was pulverized in electric grinder. Extraction of obtained powder was completed in ethanol, Water-ethanol and Petroleum ether by using Soxhlet Apparatus.. The presence of Steroids, flavonides, phenolic compound, glycosides, tannins, saponins, alkaloids and carbohydrates were revealed by phytochemical screening. The extract obtained were of aerial part of screened for anti-asthmatic activity. The Petroleum ether extract of root part was result the right side shift of dose *Achyranthes aspera* response curve in isolated goat chain and isolated guinea pig so it is indicating antiasthmatic action of drug extract.

Keywords: Asthma, phytochemical screening, Flavonoid, *Achyranthes Aspera*.

Edible vaccine

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Abstract

The biotechnology field has benefited from vaccines since they offer protection against a variety of ailments. However, because of the stomach's very acidic pH, the main barrier to oral immunization is the stomach's ability to digest macromolecule antigenic protein. The idea of an edible vaccine has recently gained traction thanks to biotechnologists. Subunit vaccines called edible vaccines are made by introducing the chosen genes into plants and then inducing the transgenic plant to produce the encoded protein. The list of foods covered by this application includes legumes, lettuce, potatoes, bananas, corn and soybeans. They are affordable and straightforward to use as a delivery system for patients of various ages. They are also simple to administer and store. Scientist Arntzen created the hypothesis of edible vaccines (EVs) to address this problem. Genetic engineering is used to create EVs, and different approaches are used to inject the proper genes into the plants. The encoded protein that serves as a vaccination is then produced by this genetically modified plant. It will be affordable for emerging nations like India because of its low price. EVs are being produced to treat a variety of illnesses, including cholera, Enterotoxigenic Escherichia coli (ETEC), hepatitis B, malaria, measles, and hepatitis C. Anthrax and HIV. This overview includes information on the development process, candidate plants, applications, and EV clinical trials.

Keywords: Antigens, Oral immunization, ETEC, transgenic plants and clinical traits.

Effect of life style factors on semen parameters of rural and urban population in chhattisgarh

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Abstract

Infertility is a condition that affects body's ability to perform the basic function of reproduction. It is defined as the inability to conceive after a year of unprotected sexual intercourse. Male factor infertility has a major role in conception difficulties of up to 40% couples. Most reported cases of Male factor infertility are idiopathic but lifestyle and environmental factors, especially diet, obesity, smoking, alcohol and exposure to environmental toxins, are known to affect reproductive health of men. Environmental factors and occupational exposure to toxins along with lifestyle contribute to the deterioration of semen quality. Aims of the present study are to correlate the life style of rural and urban population on semen parameters Dietary patterns have a beneficial effect on fertility. Sperm count and concentration are strongly associated with the likelihood of pregnancy and known to be the cause of male infertility problem 90% of the time. The rapid decline in global fertility rate in recent decades has occurred alongside decreasing sperm count and quality suggesting that declines in fertility may be due to decreasing sperm quality. Work and life stress factors that are perceived to be high in modern populations are also associated with sperm concentration, motility, and morphology. Smoking and consumption of caffeinated drinks and fried foods were significantly associated with poor semen quality. Environmental, Occupational, Life style factors, unhealthy food habits, smoking, alcohol consumption and exposure to electromagnetic radiations negatively impact male and female fertility and success of Assisted Reproductive Technology.

Keywords: Semen, Stress factors

Identification and characterization of leaf rust responsive resistant Genes of *Puccinia Trticina* regulated by Micro RNA like RNA

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Abstract

MicroRNAs are non-coding small RNA, 18-24 nucleotides in length. MicroRNA-like RNAs (MiRNAs) are short non-coding regulatory sRNAs that play an important role in regulating gene expression at the post-transcriptional level by targeting mRNAs for degradation or translational inhibition. These MiRNAs mediate post-transcriptional gene silencing (PTGS) by suppressing messenger RNA (mRNA) expression mainly through complementarity-based cleavage of mRNA sequences in plants. Four small RNA libraries were prepared from leaves of two wheat Near Isogenic Lines, HD2329 (susceptible) and HD2329+Lr24(resistant) under mock and pathogen inoculated conditions sequenced using Illumina NGS. These libraries were taken as references for the study of comparison of Resistant Mock Inoculated (RM) and Resistant Pathogen Inoculated (RPI) libraries. MicroRNA-like RNA (miRNAs) were identified from the mapped reads exclusively to the *Puccinia* whole genome. *In silico* identification and characterization of the target genes of such miRNAs were done. A comparison of RM and RPI libraries was done using CLC GENOMICS WORKBENCH (QIAGEN) to identify mapped reads exclusive to *Puccinia triticina* whole genome, it signifies cross-kingdom communication between wheat and *Puccinia triticina*. *In silico* identification of miRNAs from resistant small RNA library reads were done using SHORTSTACK taking *Puccinia triticina* cDNA as a reference. *In silico* identification of target genes of MiRNAs in wheat and *Puccinia* have done using the psRNA Target tool. Omics Box was used for functional annotation of target genes in *Puccinia*. MEGA (Molecular Evolutionary Genetic Analysis), Version 11, was used for phylogenetic tree construction of target genes of *Puccinia triticina* and related species using the maximum likelihood method, taking bootstrap value 1000. *In silico* identification of pathogenesis-related target gene location on chromosomes is done using URGI BLAST. MiRNAs of *Puccinia* and their complementary targets have been identified. The phylogenetic relationship of *Puccinia triticina* with *Puccinia graminis* was established using MEGA11. The total number of MiRNAs identified from the RM (uninfected) library is 8. The total number of MiRNAs identified from the RPI (infected) library is 12. The total number of targets identified by MiRNAs from the RM (uninfected) library is 45. The total number of targets identified of MiRNAs from the RPI (infected) library is 79. The minimum fold energy of precursor MiRNAs were identified. The hairpin sequences of MiRNAs were identified using the RNA fold tool to study the secondary structure of MiRNAs. Wet lab validation using Real-Time PCR has been done. It predicted the relative expression level of target genes at different time points of infection caused by *Puccinia* in wheat. Hence, it can be concluded that MiRNAs play regulatory roles in the pathogenesis of leaf rust disease in wheat and it shows cross-kingdom communication among the wheat and *Puccinia triticina*.

Keywords: Micro RNA, MiRNAs

Conversion of IL-15 into a Stable and Efficacious Therapeutic

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Abstract

IL-15 is a crucial therapeutic agent for the adjuvant of vaccines and the treatment of cancer. But its potential is constrained by a short half-life and limited bioavailability. We have altered IL-15 into a chimeric molecule to extend the bioavailability of the drug by increasing its half-life. We have covalently linked IL-15 with Ig base to create a stable chimeric protein that also had a 40-fold longer serum half-life. In comparison to their monomeric versions, the dimeric structure of these IgG-based biologics is more stable, resistant to proteolytic cleavage, and requires a lower dosage to produce the desired reaction. Additionally, the targeted action of the structured chimeric IL-15, which is trans-presented to the T cell by an antigen-presenting cell together with the antigen, may aid in the development of improved antigen-specific memory T cells on a quantitative and qualitative level. Our data suggest that chimeric IL-15 has the ability to augment CD8⁺ T cell responses and memory formation. Chimeric IL-15 will be a super-agonist for memory CD8⁺ T cell responses as a result of its prolonged half-life, dimeric form, and predicted targeted trans-presentation by APCs to the T cells.

Keywords: IL-15, bioavailability, immunotherapy, adjuvant

An Attunement on UGs of $\text{Al}_{0.27}\text{Ga}_{0.73}\text{N}/\text{GaN}$ for Disinfection Applications in Immunology

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Abstract

This study's objective is to analyze an advanced attunement UGs (Ultraviolet Gain-characteristics) of $\text{Al}_{0.27}\text{Ga}_{0.73}\text{N}/\text{GaN}$ nanostructure for disinfection applications in Immunology under nanotechnology. At first in this study an emerging k.p theory has been utilized in calculating the several UV gain parameters. Further, in this study the intensity performance of UV gain spectra with UV-photon's wavelength of $\text{Al}_{0.27}\text{Ga}_{0.73}\text{N}/\text{GaN}$ has been investigated and analyzed at neutron irradiation fluence of $(5.6 \times 10^{11} \text{cm}^{-2})$. Owing to the fluence effect of neutron irradiation of $(5.6 \times 10^{11} \text{cm}^{-2})$ the potential height of barrier nanoscale layers is enhanced, hence leakage of electrons occurs diminished as a consequence intensity of UV gain is obtained in enhanced order. Thus this enhancement of intensities of spectra of UV gain (in cm^{-1}) has been obtained in the wavelength range 180 nm to 380 nm. However, in the analytical results, the crest value of UV gain intensity ($\sim 2750 \text{cm}^{-1}$) has been achieved at the UV-photon's wavelength $\sim 254 \text{nm}$. This UV light of wavelength $\sim 254 \text{nm}$ has not only played a substantial role for disinfection applications in today's life but this UV light of wavelength $\sim 254 \text{nm}$ has also been used in the high purification to disinfect the surfaces, air and water by eliminating the various types of viruses, bacteria and harmful contaminants. Moreover, in today's research UV light of wavelength $\sim 254 \text{nm}$ can also be used for BT (Biochemical Testing), MDs (Mercury Detectors) and process of DNA analysis etc.

Keywords: UV-Gain, Peak UV-Gain, k.p theory, Nanostructure, BT, MDs, AlGa_{0.27}N, GaN

The Complex Role of the Gut Microbiome in Inflammatory Bowel Disease and Immune Homeostasis

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Abstract

The gut microbiome is a complex community of microorganisms that plays a critical role in maintaining immune homeostasis. Alterations in the gut microbiota and microbiota-derived metabolites have been linked to the development and progression of inflammatory bowel disease (IBD), a chronic immune-related inflammatory disease that affects the gastrointestinal tract. In IBD, dysregulation of the immune system can result in chronic inflammation and tissue damage in the gut. The gut microbiota can influence the immune system by modulating the production of pro-inflammatory cytokines, regulating the differentiation and activation of immune cells, and affecting the integrity of the gut epithelial barrier. Microbiota-derived metabolites are produced by gut bacteria from dietary components or by the host and can be modified or synthesized by gut bacteria. These metabolites influence a plethora of immune cell responses, including T cells, B cells, dendritic cells, and macrophages, and are involved in the pathogenesis of IBD. For example, some microbiota-derived metabolites such as short-chain fatty acids (SCFAs) have been shown to have anti-inflammatory effects and can protect against IBD, while others such as lipo-polysaccharides (LPS) can promote inflammation and contribute to the development of IBD. The relationship between the gut microbiota and host immune responses is complex and occurs not only in the intestine but also elsewhere in the body. Further research is needed to investigate the effects of different microbial metabolites on immune cells and their potential roles in various immune-related chronic inflammatory diseases. The effects of most gut microbiota-derived metabolites on immune cells are largely context-dependent, and it is unknown whether they function differently under homeostatic and inflammatory conditions. Moreover, the potential clinical uses of microbiota-derived metabolites in the treatment of immune-related chronic inflammatory diseases remain unclear and require further investigation.

Keywords: microbiota, short-chain fatty acids

Recent advances in nanotechnology for dendritic cell -based immunotherapy

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Abstract

Dendritic cells (DCs) are the most important antigen presenting cells that determine cancer immune responses by regulating immune activation and tolerance, especially in the initiation stage of specific responses. Manipulation of DCs to enhance specific anti-tumor immune response is considered to be a powerful tool for tumor eradication. Nanotechnology, which can incorporate multifunction components and show spatiotemporal control properties, is of great interest and is widely investigated for its ability to improve immune response activity against cancer and even for prevention and avoiding recurrence. In this mini review we aim to provide a general view of DCs based immune therapy including that involves the promising nanotechnology. Particularly we discuss: (1) Manipulation or engineering of DCs for adoptive vaccination (2) Employing DCs as a combination to more existing therapeutics in tumor treatment and (3) Direct modulation of DCs in vivo to enhance antigen presentation efficacy and priming T-cells subsequently.

Keywords: Dendritic cells, immune response, cancer, nanotechnology, tumor treatment

Helminths and Immune responses

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Abstract

Helminths are invertebrate animals that comprise a broad spectrum of different pathogens able to affect human health and are thus are of considerable medical and economic importance.. Among these parasites, there are two major phyla: the nematodes (or roundworms) and the platyhelminthes (also known as flatworms), with the latter in turn being subdivided into trematodes (flukes) and cestodes (tapeworms). Worms are able to persist in the host and are mainly responsible for chronic infection despite a strong immune response developed by the parasitized host by an association of Th2-like and Treg responses . Type 2 responses include Th2, Type 2 innate lymphoid cell, eosinophil and antibody responses .Treg responses have regulatory responses involving regulatory cytokines and cellular subsets. Thus, Helminth infections are typically associated with hypereosinophilia, considerable IgE production, mucous mastocytosis, and goblet cells hyperplasia .Immune responses against helminths can also results in pathogenicity, which depends upon the ability of the host immune system to prevent establishment of the parasite versus parasite's ability to evade host immune strategies. Helminths are strong immunomodulators and Th2/Treg-like immunomodulation allows the survival of both host and parasite by controlling immunopathologic disorders and parasite persistence. Modified Th2-like responses effects co-infection, vaccination, and inflammatory diseases as well .In this review, immune responses in helmithinfections as well as their modulation that enables the establishment of long-standing or persistent infection and its major mediators are discussed.

Keywords: Helminths. Immune responses, Immunomodulations, Th2, Treg.

Synthesis, Characterization and Medicinal Applications of Chromones

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Abstract

Chromones are a class of organic compounds that are characterized by a benzopyran-4-one core structure. They have attracted significant attention in the pharmaceutical industry due to their diverse biological activities, including anti-inflammatory, antioxidant, and antitumor properties. The chromones molecule is planar, with the pyran ring and the benzene ring lying in the same plane. The molecule also has several functional groups, including a carbonyl group, which is polar, and a benzene ring, which is nonpolar. The presence of these functional groups gives chromones its characteristic properties and reactivity. The carbonyl group, for example, can act as an electrophile in reactions, while the benzene can participate in aromatic substitution reactions.

Keywords: Chromones, antitumor

Phytochemical analysis and evaluation of antiurolithiatic, biostimulant & mordant properties of banana pseudostem extract

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Abstract

The banana is a tropical exoteric fruit that is a significant food source worldwide. Almost all of the banana tree's components, including the fruit, stem juice, and flowers, are used as traditional medicines to treat diarrhea and even snake bites in addition to its antioxidant properties. The goal of the current study was to evaluate the phytochemicals in pseudo stem extract for their bio stimulant, mordant, and antiurolithiatic activities. Alkaloids, Resins, Terpinoids, Tannins, Triterpinoids, Proteins and Amino Acids, Flavonoids and Phenols are some of the phytochemical components found in banana pseudo stem sap that have shown promise for the development of current chemotherapies against a variety of diseases. Various bioactive compounds and many families of flavonoids with antiurolithiatic properties are present in the sap.

Keywords: Banana, Pseudo stem sap, Antiurolithiatic, Bio stimulant

A Study on Synthesis of Silver Nanoparticles using Zizyphus Spina Christi (Christ's thorn) leaves extract

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Abstract

Zizyphus Spina Christi (Christ's thorn) is in the family of Rhamnaceae. Christ's thorn leaves extract have biological activity. Christ's thorn leaves extract contain various beneficial ingredients, triterpenoidal saponin glycosides, betulic acid, ceanothic acid, christinin-A, B, C and D. Bionanotechnology has emerged up as integration between biotechnology and nanotechnology for developing biosynthetic and environmental friendly technology for synthesis of nanomaterials. Silver has been known to have effective medicinal properties for centuries. Due to the presence of bioactive compounds in the selected plant leaves was used to Silver nano particle synthesis for enhancing the biological activity. The reduction of silver nitrate using the plant leaf extract was viewed by the colour change in the reaction solutions. The maximum absorbance peak was seen at 420 and 440 nm respectively. 3698.22 cm⁻¹ assigned to O-H (s) stretch, 2921.59 cm⁻¹ assigned to C-H (s) stretch, 1752.62 cm⁻¹ assigned to C=C aromatic stretch, 730.82 cm⁻¹ assigned to C-H alkenes stretch. The size is reduced initially due to the reduction in aggregation of the growing nanoparticles which possessed flower shaped structure. The further study will examine the effect synthesized nanoparticles on skin cancer by invitro.

Keywords: Zizyphus Spina Christi, Silver Nitrate, Nanoparticle, FTIR, SEM

Genome-based approach delivers vaccine candidates against *Pseudomonas fluorescens*

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Abstract

High incidence, severity and increasing antibiotic resistance characterize *Pseudomonas fluorescens* infections, highlighting the necessity for new therapeutic options. To date, there is no vaccine available for this pathogen. We attempted to exploit the genomic and proteomic information of *P. fluorescens* through reverse-vaccinology approaches to unveil the prospective vaccine candidates. *P. fluorescens* strain PFS1 genome was subjected to sequential prioritization approach following genomic, proteomics and structural analyses. To spot novel vaccine candidates, we started from the genome sequence analysis of the *P. fluorescens* reference strain PFS1 exploring the reverse vaccinology approach integrated with additional bioinformatic tools. The antigenicity and topology studies showed that enzyme was qualified to act as antigens. From the entire enzyme 12 bcell epitopes were predicted. Out of 12 b-cell epitopes 7 bcell epitopes identified as best epitopes based on antigenic and exomembrane properties. The chosen b-cell epitopes docked against *L. rohita* fish producing antibodies, IgH. Supported docking score DFTSGSDKIDLTGITKGSGL is qualified as best B-cell epitope against *L. rohita* fish producing antibody IgH. The vaccine candidate, DFTSGSDKIDLTGITKGSGL consistent with Peptide Station at Sweden, were identified as effective immunogenic vaccine candidate for antibody production. within the similarity BLAST search, 100 different *Pseudomonas* species therein 38 *P. fluorescens* strains having homology starting from 85 to 100% identical were identified. Identified common vaccine candidate, DFTSGSDKIDLTGITKGSGL, not just for *Pseudomonas fluorescens* producing AprX but also for multiple strains causing different sorts of Red skin disease.

Keywords: *P. fluorescens*, Reverse vaccinology and Vaccine

Study of active ingredients of five indigenous plants with strong medicinal and immune booster properties

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Abstract

Most of the area of Rajasthan state has xerophitic environmental conditions with high temperature and lack of water. These conditions are completely adverse for both, flora and fauna even then there are many indigenous plants having potent medicinal properties. *Thuja occidentalis*, *Tinospermacordifolia*, *Argemonemaxicana*, *Ocimumtenuiflorum* and *Aloe vera* that are commonly found in several area of Rajasthan have many active ingredients which have strong immune booster properties. There are many medicines in Homoeopathy and Ayurveda which uses extracts of different parts of these plants in preparing their medicine. *T. occidentalis* uses as medicine in treatment of infections of respiratory tract and skin, *T. cordifolia* is a strong immune stimulator uses in allergic rhinitis, diabetes, cancer and high cholesterol treatment. *A.maxicana* used in treatment of skin diseases and also in jaundice. *O.tenuifloruma* small herb uses in treatment of Kidney stones, to maintain eye health and many others. *A. vera* is widely used in skin treatment and also in stomach related problems. These plants contains different types alkaloids, essential oils, flavonoids and also vitamins that are potent medicinal values and help to cure the health related problems.

Keywords: medicine, skin, disease, immune, alkaloids.

Role of medical textiles in infectious disease control system

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Abstract

Medical textiles are one of the most important branches of Technical Textiles. The Combination of textile technology and Medical sciences has created a new field called Medical Textiles. Medical textiles are also called as Healthcare Textiles. Textiles always were a part of the health industry. Basically, Medical textiles are used for first aid, clinical or hygienic purposes and rehabilitation. The invasion & multiplication of micro-organisms like bacteria, viruses, parasites that are not generally present within the body. An infection may be caused no symptoms and be sub-clinical, or it can cause symptoms and be clinically apparent. Infection can remain localized, or it can spread through the blood or lymphatic vessels to become systemic. Micro-organisms which live in the body are not considered infections. Medical textiles are important for preventing infection and control. Healthcare textile gives us cost-effective ways to protect both hospital staff and their patients from virus, bacteria and other micro-organism. The Medical Textile fiber has the combination of antimicrobial compounds, based on metallic salts which ultimately control bacteria and fungi. The compounds of fibers are embedded in the matrix of fibers which can give it impervious to washing & wear. The disposable apparel is the main product of medical textiles. The apparel which is used and trashed after the one-time use is called disposable apparel. The most medical textile is used for one time, because of infection they cannot be used more than once. Gowns and Caps, Medical and Pharmacy division, Medical Cloths and wipes, Bandages, Masks, Sterilization wrap. Medical textile has a very important role to protect and prevent and control the infection. That's why medical textile continuing well into the future. Significant amounts of developments in medical textile product are gained or maintained in the competitive edge and to make products more efficiently and at a lower cost.

Keywords: Medical Textiles, Micro-Organisms, Antimicrobial Compounds, Disposable Apparel

Impact assessment of *Azadirachta indica* leaves extract on *Spilosoma obliqua* Walker (Bihar hairy caterpillar) infesting *Morus alba* L., (Mulberry Plant)

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Abstract

Numbers of plants have insecticidal properties this some of them are used in agriculture crop protection from polyphagous insect pests. *Azadirachta indica* leaves have strong insecticidal properties. *Spilosoma obliqua* Walker is one of the major insect pest attacks on the mulberry plant and they are adversely affecting plant health which results in the deterioration of the quality and quantity of mulberry leaves. Mulberry leaves are the sole food material of silkworm larvae (*Bombyx mori* L.) which is used for rearing and production of natural silk. The seasonal incidence of *Spilosoma obliqua* Walker on mulberry was highest in the mulberry garden of the Ahmednagar district from May 2016 to April 2017. The *Spilosoma obliqua* Walker exposed to *Azadirachta indica* (Neem) leaves extracts against the 4th instar caterpillar under the laboratory of the Department of Zoology in Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (M.S) India. The results show that the 4 th instar caterpillar does not feed the extract-treated mulberry leaves and mortality of the caterpillar was positive and other biological characteristics of the caterpillar show negative effects in treatment. Details of this are discussed in the text.

Keywords: *Spilosoma obliqua*, Mulberry, Neem, Silkworm, Silk

Drinking water Quality Assessment of Alwar (Raj.): A Case Study

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Abstract

Pollution of public drinking water poses a serious Problem everywhere. The present work deals with the physico-chemical analysis of drinking water quality of Alwar. Water sample were collected from different parts of the town and were analyzed by standard methods of APHA (1985). Parameters viz., temperature, colour, odour, taste, PH, electrical conductivity, turbidity, hardness, total alkalinity, BOD, COD, dissolve oxygen, nitrate., sulphate, chloride, phosphate, calcium and magnesium were analyzed and compared with standard of BIS, WHO and ICMR.

Keywords: Drinking water, physico-chemical parameters, water quality.

Influence of polyherbal ointment on immunocompromised excision wounded animals

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Abstract

Wounds are the unavoidable events of life. Wound may be defined as a disruption of the cellular and anatomic continuity of a tissue, with or without microbial infection and is produced due to any accident or cut with sharp edged things. Skin healing is a complex process that involves inflammation, re epithelization, angiogenesis, granulation tissue formation and deposition of interstitial matrix, besides other events carried out by different types of cells, such as keratinocytes, fibroblasts and inflammatory and endothelial cells. These phenomena are influenced by the interstitial matrix, growth factors and other mediators. The present study was designed to investigate the wound healing activity of polyherbal ointment on immunocompromised excision wounded rats. The polyherbal ointment was prepared by using three traditional medicinal plants like *Calendula officinalis* Linn. (Flower), *Centella asiatica* Linn. (Leaves), *Euphorbia hirta* Linn. (Leaves). The immunocompromised state was induced by pretreatment with hydrocortisone (HC) at 40 mg/kg body weight (i.m.) in albino rats of both sex. Animals weighing 150 -200g were divided into five groups each comprising of six rats: Group I served as normal control, Group II served as immunocompromised excision wounded control and Group III, IV served as immunocompromised excision wounded rats were treated with polyherbal ointment of two different doses (10% and 20%) applied topically for 14 days and group V served as immunocompromised excision wounded animals treated with reference ointment soframycin. Healing potential was evaluated by the rate of wound contraction, lipid peroxide, estimation of enzymatic and non-enzymatic antioxidants like catalase, SOD, vitamin C and biochemical parameters like hydroxyproline, hesosamine, DNA, RNA and tissue protein and hematological parameters like total WBC count and platelet count. The topical application of polyherbal ointment treated groups showed increase in the level of hydroxyl proline, hesosamine, tissue protein, DNA, RNA, SOD, vitamin C and wound contraction and the ointment normalized the level of lipid peroxide, total WBC count and platelet count compared than that of immunocompromised excision wounded animals. From the above results it was concluded that the topical application of polyherbal ointment exhibited significant wound healing activity in immunocompromised excision wound as evidenced by augmented endogenous antioxidants and increased collagen synthesis.

Keywords: Hydrocortisone, Polyherbal ointment, wound healing.

Cultivation and characterization of pigmented mushroom (*pleurotusosteurs*) using beetroot as substrate in spawn production

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Abstract

In this study showed the normal edible mushrooms spawn was produced using beetroot. The pigmented mushroom (red colour) are attractive to children's and they eagerly eat also the beetroot pigmented mushroom are rich in haemoglobin it also good for women's health. The pigmented mushroom contains high nutritional value like Protein, Carbohydrate and fibre than oyster mushroom. It possessed the significant antioxidant activity than the normal edible mushroom. The further study will be conducted for the analysis of bioactive compounds from the pigmented oyster mushroom using the beetroot as a substrate.

Keywords: Pleurotusosteurs, Beetroot, Nutrients, Pigment, Antioxidant

Comparative analysis of bioactive compounds in Indian and China Garlic *Allium Sativum* (L.) by GC-MS

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Abstract

The study indented to examine the therapeutic potentials of *Allium Sativum* (Indian and China) through GC/MS characterization. The ethanolic extracts of samples were undergone the qualitative analysis. The results of qualitative phytochemical analysis of black and green grapes extracts showed the presence of alkaloids, flavonoids, glycosides, saponins, tannins, carbohydrates, phytosterol, and triterpenoids. The sample possessed Antioxidant, hypocholesterolemic, Antiandrogenic, hemolytic, Alpha reductase inhibitor, Anti-inflammatory, Antimicrobial, and Anticancer compounds. The study shows that garlic possessed different bioactive compounds. These findings are important and illuminate the role in future supplements that can prevent adverse effects. In this study, it was suggested that the intake of functional food is useful in the prevention of various diseases.

Keywords: A.sativum, GCMS, Bioactive compounds, Antioxidant, Anticancer

Applications of industry 4.0 in Medical Field

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Abstract

Industry 4.0 shows the extensive capability of manufacturing of newly customized implants and innovative tools and instruments for the medical field. It provides a type of digital hospital and a complete monitoring system that fulfils the individual requirements of the patient/medical industry with optimized time and cost. Industry 4.0 is an innovative approach to generate new concept and undertake development in the medical field through the integration of technologies, smart machines and different software. Industry 4.0 manufactures high-quality, regulated medical devices which are highly customized as per patient requirements. This revolution embraces automation and creates new manufacturing opportunities in the medical world. With the help of the Internet of things (IoT) and the Internet of services (IoS), it creates a new virtual world. It creates connectivity and data exchange with the help of new manufacturing technologies, software, sensors, robots and other advanced information technologies.

Keywords: Internet of things, Internet of services, Industry 4.0

Flaxseed (*Linum usitatissimum*) used as an Immunomodulator in various Life-style disorders

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Abstract

Alpha-linolenic acid (ALA), an important omega-3 fatty acid, and lignans, a form of phytoestrogen, are two components of flaxseed that have positive effects on the immune system. These elements have an impact on immune cells and immune response mediators such as eicosanoids and cytokines. Recent studies suggest that ALA and lignans in flaxseed affect the immune response and may be helpful in the clinical management of autoimmune illnesses. Through its effects on membrane phospholipids and the generation of eicosanoids and cytokines, the ALA component of flaxseed affects immunity, the body's capacity to successfully protect itself against foreign substances. Certain immune response mediators are affected by lignans. The results of the literature search were thoroughly analysed. The common terms "Flaxseed", "Immunomodulator", "Lignans", "Linum usitatissimum", "Bioactive Compound", "Food Application", and "Functional Properties" have been searched in a number of databases utilising PubMed and Google Scholar as search engines. Information from journals like Springer Nature, Hindawi, Elsevier, MDPI, Bentham Science, Taylor & Francis, etc. was used to create the material. Flaxseed has a nutritional makeup that can be good for your health. Many people are still unaware of the potential health benefits of flaxseed and its culinary applications. Flaxseed is the finest food source for lignans and linolenic acid. The potential for it to serve as a source of soluble fibre, antioxidants, and high-quality protein is also very high. As a result, it is suggested to use flaxseed as a dietary supplement in whole or ground form. Flax, which is high in nutrients and has a lot of health benefits, is one of the potential oil seeds. It's noteworthy to note that flax seeds' health benefits are largely attributable to the fibre, lignans, and omega-3 fatty acids they contain.

Keywords: ALA, *Linum usitatissimum*, disorders

Detection of antimicrobial activity of bacteriocin

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Abstract

The early 2000s had high hopes for the bacteriocins made by Lactic acid bacteria (LAB), especially for use in food applications. However, the use of bacteriocins to combat unwanted microorganisms created countless opportunities for cutting-edge research. There is a lot of potential for lactic acid bacteria (LAB), which are frequently employed in food as starting cultures and are known to produce antimicrobial compounds such as bacteriocins. Yakult is a probiotic dairy product that naturally ferments using *Lactobacillus bulgaricus*. This study's objective was to ascertain the antibacterial activity of bacteriocin, a substance produced by a strain of *Lactobacillus bulgaricus* that was isolated from Yakult and tested against pathogenic organisms. Based on the traits of the strains of the *Lactobacillus* species, the culture was identified. Additionally to those found in fermented foods, lactic acid bacteria (LAB) exhibit a variety of antimicrobial traits. The creation of organic acids, as well as other substances like bacteriocins and antifungal peptides, is mostly to blame for this. Purified and characterized bacteriocins with industrial potential have been discovered. Through mathematical modeling and positive predictive analytics, the kinetics of bacteriocin generation by LAB in response to process variables has been thoroughly investigated. microbiology. The use of starting cultures that produce bacteriocin in sourdough (to boost competition), fermented sausage (to have anti-listeria effects), and cheese (to have anti-listeria and anti-clostridia effects) has been investigated in both pilot-scale and in vitro laboratory fermentation. One strain from the Yakult was identified as *Lactobacillus bulgaricus* based on the results of all identification tests. In the current review, isolates were identified utilizing biochemical techniques after being screened and isolated on MRS Agar. By using solvent extraction, bacteriocin from fermented broth was removed, and its antibacterial activity was assessed against a number of test microorganisms from the Gram positive and Gram negative groups. According to my research, the bacteriocin we isolated from yakult has antibacterial properties and can be utilized to treat several common skin illnesses.

Keywords: Lactic acid bacteria(LAB), *Lactobacillus bulgaricus*, Yakult, Antimicrobial activity, Food preservative, Bacteriocin, Biochemical tests, MRS Agar.

Characterization of Nanoparticles incorporated into Lipid Membranes

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Abstract

Nanoparticles have wide applications in biomedical industry such as drug discovery, drug development and image targeting. Understanding the nanoparticles interactions with biological membranes become highly important as it is known to have effect on the fluidity of the membranes. The gold nanoparticles - lipid membrane system have been characterized by various biophysical techniques like UV-Visible spectroscopy (UV-Vis), Fourier transform infrared spectroscopy (FTIR) and Transmission electron microscopy (TEM). From the characterization techniques, it has been observed that by incorporating gold nanoparticles into DPPC membranes, the fluidity of the membranes have been increased. This study will pave a way to understand the natural biological systems in mammalian cells.

Keywords: Biological membranes, Gold Nanoparticles, Fluidity, Lipids

Medicinal Plants as Immunity Boosters: A Review

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Abstract

Medicinal plants have been used for centuries in traditional medicine systems to prevent and treat various diseases. Recent studies have shown that many of these plants have immune-boosting properties, making them a promising avenue for developing natural remedies to enhance the body's defense against infections. This review provides an overview of the scientific evidence supporting the use of medicinal plants as immunity boosters. It explores the mechanisms of action of these plants, their active compounds, and their potential benefits for human health. The review also discusses the challenges and opportunities associated with the development of plant-based immune-boosting products, including the need for standardized extracts, quality control, and clinical studies to establish efficacy and safety. Overall, this review highlights the potential of medicinal plants as a source of natural immune-modulators and encourages further research in this field.

Keywords: Medicinal plants, Immunity, Immune system, Immune boosters, Natural remedies.

Green Synthesis of Silver Nanoparticles from *Moringaoleifera* Leaf Extract for Antibacterial Activity against Plant-Pathogenic antimicrobial activity: *In-Vitro* and *In- Vivo* Studies

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Abstract

The *Moringaoleifera* mediated silver (PL-AgNPs) nanoparticles are very stable and efficient. UV-Vis spectroscopy, dynamic light scattering (DLS), X-ray diffraction (XRD), transmission electron microscope (TEM), scanning electron microscope (SEM), and energy dispersive X-ray spectroscopy (EDX) were used to characterize the produced AgNPs. UV-Vis analysis showed a characteristic peak at 435 nm corresponding to surface plasmon resonance. The synthesis process was spectrophotometrically optimized for various parameters. After optimization, highly stable AgNPs were prepared using 3.0 ml of *M. oleifera* leaf extract, pH 7.0, 1.0 mM AgNO₃, and 60 °C. The zeta potential was measured by DLS, which showed -20.8 mV and the PDI value was 5.42. TEM and SEM analysis shows a spherical shape of the synthesized nanoparticles, and the size was measured between 10 and 40 nm. EDX analysis showed intense peaks from silver and oxygen and small peaks from various metal atoms such as Na, P, S and Al indicating their presence in trace amounts. The average size of the PL-AgNPs was 14 nm. The antibacterial activity of these prepared silver nanoparticles against pathogenic bacterium *Escherichia coli* (E. coli) has shown the highest ZOI of 2.45 cm at 30 ppm. Biosynthesized nanoparticles have proven to be inexpensive, environmentally friendly, stable, easily reproducible, and highly effective against plant-pathogenic antimicrobial activity functions in both *in vitro* and *in vivo* studies.

Keywords: Silver nanoparticle; *Moringaoleifera*; Green synthesis; Antimicrobial activity

A review on the effect of age on antimicrobial activity of wheat grass (*triticum aestivum l.*)

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Abstract

Wheat grass (*Triticum aestivum*) having high nutritional value belongs to *poaceae* family. It is rich in minerals vitamins, amino acids, proteins, carbohydrates, chlorophyll and enzymes which are useful for our body. The phytochemical analysis showed the presence of phytochemical compounds like carbohydrates, tannins, steroids, terpenoids, alkaloids, flavonoids, cardiac glycosides, saponins, coumarins, amino acids etc. Different solvent extracts of *Triticum aestivum* leaves exhibited more antimicrobial activities against gram negative activity in comparison to gram positive bacteria. This antimicrobial activity again depends on age of *Triticum aestivum* and environmental condition of the plant growth. The methanolic extract of *Triticum aestivum* leaves of 5-days old plants produced highest antibacterial activity under normal sunlight however, the methanolic extract of the wheat grass grown in greenhouse showed maximum antimicrobial activity which were 7 days old. disc diffusion method. The result suggested that wheat grass leaf have rich in primary and secondary metabolite. The maximum zone of inhibition shown in methanolic extract. and also, the leaves are rich sources of primary and secondary metabolites.

Keyword: wheatgrass (*Triticum aestivum*) age, methanol, ethanol, acetone, water, disc diffusion method

A Study on Antiliver cancer activity of *Allium sativum* using Hep G 2 Cell Line

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Abstract

Liver cancer (hepatic cancer) is the most frequent cause of death. Hepatocellular carcinoma is the fifth commonest liver cancer in the world. Plants have a long history of use in the treatment of cancer. Plant-derived compounds have also been an important source of anticancer agents, which include alkaloid, flavonoid, phenol etc., The aim of this study was to investigate the cytotoxic activity of *A. sativum* against liver cancer cell line HepG2. The extract inhibited the proliferation of HepG2 cells more than aqueous methanol (20:80, v/v) extract, with increasing inhibitory activity as the concentrations of extracts increased. After 24 and 48 h, showed $20 \pm 2\%$ and $11 \pm 0.0\%$ cell viability of HepG2 cells, respectively, at a concentration of 150 $\mu\text{g}/\text{mL}$. The relatively stronger cytotoxicity activity was found at low concentration contains anti oxidant activity and bioactive compounds. Further studies are needed to isolate active compounds from plants identified to have potent cytotoxic effects and unravel anti-cancer activity mechanisms.

Keywords: *A.sativum*, liver cancer, antioxidant, HepG2 cell line

Preparation, stability and thermophysical properties of nanofluid

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Abstract

Nanofluid, a suspension of nanoparticles, has excellent thermal conductivity and rheological characteristics, making it a viable heat transfer fluid for improving heat transmission. This study reviews the research that has gone into optimizing heat transmission using nanofluid and highlights the most recent developments in this field. Recent advancements in both the capacity to prepare and increase stability were discussed. Nanofluid thermophysical and heat transmission properties were discussed, as were the effects of variables like particle size, shape, surfactant, temperature, etc. Potential uses of nanofluids are shown in the current research, including heat exchangers, transportation cooling, refrigeration, electronic equipment cooling, transformer oil, industrial cooling, nuclear systems, machining operations, solar energy.

Keywords: Thermal conductivity, SEM, specific heat, concentration, stability

Evaluation of anti-diabetic activity of selected plants using *Drosophila* as a model organism

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Abstract

Diabetes is caused by deficiency of insulin or loss of insulin action. Genetic factors, high dietary fat content and physical inactivity are the major threatened factors for the development of diabetes. According to data cited by the World Health Organization, by 2014 incidence of diabetes had risen to 8.5%. As of now, diabetes is an incurable and incapacitating disease with a long and protracted progression. Natural resources including medicinal plants have been commonly used for treatment of diabetes. *D. melanogaster* has become a novel model in nutritional research, especially, since metabolic pathways including carbohydrates, lipids, fat metabolism and insulin signaling are evolutionary conserved. Accordingly, fruit flies have been successfully used to elucidate the impact of plant bioactives on the energy metabolism and to identify potential molecular targets such as α -amylase and α -glucosidase. Moreover, a high sugar diet was found to be sufficient to induce an obesity and insulin-resistance phenotype in the fruit fly. Certain medicinal plants like infestation of mistletoe in almond leaves, Moringa, Avens root is useful to treat diabetes in *Drosophila* as it contains antioxidative and hypoglycemic properties. Quercetin is the most abundant dietary flavonoids in green leaves with cardioprotective, anticancer, antitumor, antiulcer, antiallergy, antiviral, anti-inflammatory activity, antidiabetic, gastroprotective, antihypertensive, neuroprotective, immunomodulatory, and anti-infective activities. Reduction in the activities of GST and SOD was obtained in the SRD-fed flies and the treated flies had improved antioxidant enzyme activities.

Keywords: Diabetes, *Drosophila*, anti-oxidant, medicinal plants.

The pharmacological activities and mechanisms of Sulfated Polysaccharides: an overview

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Abstract

Fucoidan is a kind of sulfated water-solvent polysaccharide separated from earthy colored kelp. It shows solid natural exercises, including, antibacterial, antiviral, antitumor, anticoagulant, and cell reinforcement exercises. Marine- inferred polysaccharides and their lower atomic weight oligosaccharide subsidiaries have been displayed to have an assortment of antiviral exercises. This sulfated polysaccharide has exceptionally assorted synthetic constructions and creations, which change essentially relying upon the geological area, species, seasons, and populace age. The shifted research interests in fucoidan direct different extraction methods of fucoidan, where fluid frameworks are leaned toward because of the water dissolvability of fucoidan. As a general rule, the fundamental worry of the extraction is the yield and virtue of the extricated fucoidan, where different extraction strategies give different priority on yield and immaculateness. Specifically, it will give a report on the antimicrobial activities of the sulfated polysaccharides got from marine green growth including carrageenans, alginates, and fucans, connecting with their construction highlights and the design movement connections. As of late, the investigations on the pharmacological exercises of marine regular items, particularly marine polysaccharides, are drawing in increasingly more consideration from one side of the planet to the other.

Keywords: Fucoidan, Marine

Evaluation on antimicrobial activity of silver Nanoparticles using Cymbopogon citratus Leaf Extract

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Abstract

Plant-mediated synthesis of nanomaterials has been increasingly gaining popularity due to its eco-friendly nature and cost-effectiveness. In the present study, we synthesized silver (Ag) nanoparticles using aqueous extracts of fresh leaves of cymbopogon citratus medicinal plants as bioreducing agents. This method allowed the synthesis of nanoparticles, which was confirmed by ultraviolet-visible (UV-Vis) spectrophotometry and transmission electron microscopy (TEM). UV-Vis spectra and visual observation showed that the color of the fresh leaf extracts of cymbopogon citratus turned into grayish brown and brownish yellow, respectively, after treatment with Ag precursors. Moreover, aqueous leaf extracts of cymbopogon citratus was separately tested for their antimicrobial activity against bacterial organism. The results showed that the bacterial growth was inhibited by the extracts containing Ag nanoparticles. Statistical calculation performed using the Well Diffusion method showed that zones of inhibition for the two bacteria produced by the aqueous leaf extracts of cymbopogon citratus containing 3 mM and 5 mM Ag precursors were not significantly different from that by ciprofloxacin as positive control. On the contrary, there was significant difference between the zone of inhibition containing Ag nanoparticles were comparable to ciprofloxacin in inhibiting bacterial growth. Among fungi aspergillus sp. are the cost effective source of biomaterial for biosynthesis of silver nano-particle. In this study, silver nano-particles were synthesized extra-cellularly using Aspergillus niger and Aspergillus floccosus evaluated by the disc diffusion method.

Keywords: Aspergillus floccosus, Silver nanoparticle, Spectrophotometry

Evaluation of antimicrobial assay and characteristics of zinc nanoparticles produced by green synthesis method using actinidia deliciosa fruit extract

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Abstract

In recent science Nanotechnology is a burning field for the researchers. Nanotechnology deals with the Nanoparticles having a size of 1-100 nm in one dimension used significantly concerning medical chemistry, atomic physics, and all other known fields. Nanoparticles are used immensely due to its small size, orientation, physical properties, which are reportedly shown to change the performance of any other material which is in contact with these tiny particles. These particles can be prepared easily by different chemical, physical, and biological approaches. But the biological approach is the most emerging approach of preparation, because, this method is easier than the other methods, eco-friendly and less time consuming. The Green synthesis was done by using the aqueous solution of Actinidia deliciosa fruit extract and Zinc Oxide. Zinc was of a particular interest for this process due to its evocative physical and chemical properties. A fixed ratio of plant extract to metal ion was prepared and the colour change was observed which proved the formation of nanoparticles. The nanoparticles were characterized by UV-visible Spectrophotometer and FTIR, The antimicrobial activity of synthesized Zinc from Actinidiadeliciosawere evaluated.

Keywords: Nanobiotechnology, Zinc oxide, Antioxidants, Green synthesis.

Bioinspired synthesis of phyllanthus acidus leaf extract Functionalized silver nanoparticles and its antimicrobial Evaluation

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Abstract

In materials science, “green” synthesis has gained extensive attention as a reliable, sustainable, and eco-friendly protocol for synthesizing a wide range of materials/nanomaterials including metal/metal oxides nanomaterials, hybrid materials, and bioinspired materials. As such, green synthesis is regarded as an important tool to reduce the destructive effects associated with the traditional methods of synthesis for nanoparticles commonly utilized in laboratory and industry. In this review, we summarized the fundamental processes and mechanisms of “green” synthesis approaches, especially for metal and metal oxide [e.g., gold (Au), silver (Ag), copper oxide (CuO), and zinc oxide (ZnO)] nanoparticles using natural extracts. Importantly, we explored the role of biological components, essential phytochemicals (e.g., flavonoids, alkaloids, terpenoids, amides, and aldehydes) as reducing agents and solvent systems. The stability/toxicity of nanoparticles and the associated surface engineering techniques for achieving biocompatibility are also discussed. Finally, we covered applications of such synthesized products to environmental remediation in terms of antimicrobial activity, catalytic activity, removal of pollutants dyes, and heavy metal ion sensing.

Keywords: Nanoparticles, Metal oxides, Green synthesis

Incidence of *Paramphistomum*spp. in Goat in Bhubaneswar, Odisha

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Abstract

Goat husbandry has greatly contributed to the development of the agro-economics of many developing countries like India. For this purpose, goats are commonly reared to get their meat, milk and fibres. Goats suffer from various diseases among which gastrointestinal helminth parasite infection is globally considered as the most important transmissible disease (Allaie et al., 2018). As per survey reports 90% goats are infected with helminth infection in any stage of their life span. The *Paramphistomum* spp. are trematode helminth parasite which invade in the upper part of small intestine and cause haemorrhage, resulting into anaemia, loss of weight gain and decreased production also inhibits the growth of rural economy due to mortality and morbidity. In Indian, paramphistomosis of domestic ruminants ranks next to fasciolosis and the mortality can reach up to 75 to 88 % in goats. In the present study, a total of 50 gastrointestinal tracts (GITs) of goats were examined out of which 38 GITs were found to be infected with *Paramphistomum* parasites. Hence, the overall prevalence of *Paramphistomum* spp. in goats was found to be 75%. Further, the prevalence of *Paramphistomum* spp. was found higher in younger (<1 year) and female goats as compared to adult (> 1 year) and male goats. The present observations are of great help to understand the epidemiology of the *Paramphistomum* spp. parasites in goats and will be helpful to develop a regular control measure to reduce the parasitic burdens in goats.

Keywords: Helminth Parasite, *Paramphistomum* spp., Goats, Gastrointestinal Tracts (GITs), Epidemiology

Evaluation of anti-colon malignancy potential of plant-derived peptides as functional food using *In-silico* approach

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Abstract

Dietary proteins contain bioactive peptides that improve health and disorders prevention and have been shown to have anticancer properties. These peptides have a potential as functional food and nutraceutical supplemental in cancer therapy. Proteins from the Family fabaceae have been extensively explored to develop peptides with a range of biological functions. Anticancer treatment based on legume-derived peptides might play an important role in the pharmaceutical business due to elements that improve patients' life quality or lower the risk of cancer. Digestive tract, primary site for food digestion and nutrition absorption epithelial cells have EGFR (epidermal growth factor receptor) belong to the ErbB (erythroblastosis oncogene B) family. The normal ErbB receptor consists of a ligand-binding domain outside the cell, a transmembrane domain, and an intracellular domain. EGFR activation triggers a multitude of downstream signalling pathways that affect proliferation, differentiation, and metabolism, processes which are important in the beginning and progression of cancer. In the present study investigation on inhibitory role of plant's peptide on the EGFR receptor was studied to use the peptide/s in functional foods and nutraceuticals due to their health-promoting properties and lack of adverse effects. Various bioinformatics tools were used to perform virtual screening. Approximately 500 small peptides (length <20 AA) were obtained from various databases. For molecular docking, Autodock and Lightdock and/or CABS-Dock were utilised. The molecular dynamics were then done using OpenMM. The peptide's characteristics were examined, as well as their toxicity prediction was also performed. At CABS server the Protein-peptide complex were analyzed, of which ACIQKWRKIWDTEN was found potent with minimum RMSD (3Å) and highest cluster density. The same peptide binds with -12 kJ/mol of energy with EGFR receptor while most of the other have a positive binding energy as calculated using Autodock. Receptors ILE318, CYS283, PHE230, LEU38 and ALA62 were found in close contact (>2Å) with ILE3, TRP10, THR12, TRP6 and TRP6 of ligand peptide. The MD simulation studies further confirm the binding capability of the peptide. Among the examined peptides, a peptide ACIQKWRKIWDTEN was determined to be the most effective EGFR blocker. So, uptake of such food or use of the peptide as supportive therapeutic may enhance the recovery and post-recovery life. Further confirmation and adjustments are suggested in order to investigate the peptide's medicinal potential.

Keywords: Anti-cancer Peptides, Molecular docking, EGFR

Control of *Euschistus servus* by plant products

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Abstract

Brown stink bug is a serious insect pest for soybean crop. The mass movement of brown stink bugs into soybean field begins, scientists are alarmed. Presently, there are no viable strategies for control of the brown stink bugs. Chemical control of brown stink bug can be challenging. Adults are harder to kill than nymphs but both life stages present challenges because, unless they are hit directly with the spray, bugs will only be exposed to insecticides via their feet and feeding stylet, their narrow straw-like beak. Brown stink bugs insert their mouth parts into fruits or plant stems and by-pass most of the insecticide residue on the plant surface. The use of insecticides has very short-lived effect and there is evidence of resistance development. Even where insecticide is effective, repopulation occurs through migration from non-treated areas. Thus, residual activity of insecticides against brown stink bugs tends to be weak and adult bug populations may reinvade fields following treatment. So, present investigation has been taken to study the effect of essential oils extracted from *Cassia fistula* to control the progeny of *Euschistus servus*.

Keywords: *Cassia fistula*, *Euschistus servus*, essential oils.

Different types of wine and its therapeutic value

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Abstract

Wine is the fermented beverages product made with different variety of fruits and flowers. About 10-15% of alcohol content is found in the wine with numerous bioactive compounds such as phenols, catechin, quercetin and gallic acid, flavonoids, and resveratrol. The presence of these antioxidants is associated with the lower risk of cardiovascular diseases, free radical formation, and hyperglycemia in human body. Resveratrol present in red wine has potential chemo preventive activity. Generally, wine is prepared with the help of yeast mediated fermentation of grapes. However, various other tropical fruits such as plum, jackfruit, palm and pineapple, and flowers such as hibiscus, rosa demascena, lotus, ixora and clitoriaternatea can also be used for the wine production. Various herbs such as basil, ginger, amla and aloe-vera can also be infused into the wine, to enhance its therapeutic value. Herb-induced wines, commonly called as restorative wines can be of great importance to human health. This review provides a overview of different types of wines, the medicinal potential of wine for human health, as well as the diverse fruits utilized in wine production.

Keywords: wine, antioxidants, herb, quercetin, gallic acid, clitoriaternatea, hibiscus, ixora

Phytochemical Screening and Antibacterial Activity of *Phyllanthus niruri* in Methanolic and Aqueous Extracts

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Abstract

As a possible addition to traditional medicine, pharmaceutical companies are turning more and more to the large number of phytochemical compounds found in medicinal plants. *Phyllanthus niruri* has medicinal properties for the effective management of several ailments including Hepatitis. The present investigation was aimed to focus on the screening of phytochemical constituents, quantitative estimation of phenolics, tannins, and flavonoids and antibacterial activity of *Phyllanthus niruri* in aqueous and methanolic extracts. *Phyllanthus niruri* shows Saponins, tannins, flavonoids, steroids, cardiac glycosides etc. Different concentrations of methanolic and aqueous extracts were used for antibacterial activity. Maximum zone of inhibition was observed in 30% w/v Methanolic extract than aqueous extract. Different extracts of *Phyllanthus niruri* has the medicinally useful secondary metabolites and also act as antibacterial agent on various bacterial strains. The presence of these phytochemicals in *Phyllanthus niruri* can act as the therapeutic agents and they are responsible for free radical scavenging and antibacterial activity.

Keywords: Antibacterial activity, *Phyllanthus niruri*, Phytochemical screening, flavonoids.

Study in Proximate Composition of Seaweeds in Gulf of Mannar, Tamil Nadu, India

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Abstract

Seaweeds are marine macro algae growing abundantly in the shallow waters of sea, estuaries and backwaters up to a depth of 118 m where 0.1% photosynthetic light is available. Seaweeds possess different nutritive components like protein, lipid, carbohydrate and minerals. More than 30% of the dry weight of marine algae is ash which contains various kinds of minerals, vitamins and related substances. The nutritional value of seaweeds is really great and they are used as human food in different countries. Presently, there are 42 countries in the world with reports of commercial exploitation of seaweeds. Among them, China holds first rank, followed by North Korea, South Korea, Japan, Philippines, Chile, Norway, Indonesia, USA and India. Commercial utilization of seaweeds includes: Human food, fodder, fertilizer, drugs, paper production and the food industry. The industrial utilization of microalgae is at present largely confined to extraction for phycocolloids and to a much lesser extent, certain fine biochemical.

Keywords: Seaweed, Algae, Proximate composition, biochemical.

Study on bioactive compounds from fishes

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Abstract

The present research focused on the bioactive compound from fishes, the fish contain bioactive compounds that have been reported to promote the health of the fish consumers. Bioactive compounds are components naturally present in food found in relatively small amounts, which, after enzymatic hydrolysis at the gastrointestinal level, influence cellular and physiological activities, obtaining a positive effect on consumer health. These benefits are achieved through multifactorial physiological mechanisms that include antioxidant, antihypertensive, anti-diabetic, antimicrobial, antiviral or immunomodulatory activity, among others. The increase in diseases such as cancer, hypertension and diabetes has caused the population to prefer good nutritional foods that also exert beneficial effects on health. Some of the bioactive compounds reported in these species include bioactive peptides, omega-3 polyunsaturated fatty acids and minerals. Therefore, in this research have reviewed the scientific evidence for the benefits of consuming bioactive compounds from oily fish and their effect on physiological risk factors, molecular pathways and bioactive metabolites. Fish have bioactive compounds like omega-3 polyunsaturated fatty acids, protein hydrolysates, polypeptides, peptides, amino acids, vitamins and minerals. It can cure various disease like cardiovascular diseases, type 2 diabetes and cancer; all-leading to mortality are observed to be lowered by increased intake of fish and fish products. The unique bioactive compounds in fish are pointers to the health benefits of fish ingestion. In this paper, bioactive compounds in fish and the health benefits associated with their consumption of various reviews.

Keywords: Fish, Bioactive compounds, Antioxidant, Antimicrobial, Omega-3.

Studies an amino acid and fatty acid from Marine Fishes

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Abstract

The present study information was covered the amino acid and fatty acid profile from marine fishes. Marine organisms have been increasingly regarded as good sources of new drugs for human therapeutics and also as nutrients for human diet. Unsaturated fatty acids were predominant compounds, with those from the ω -6 series, being in higher amounts than their ω -3 homologues, and cholesterol being the main sterol. The amino acids, fatty acids and sterols qualitative and quantitative composition is very important for humans. Amino acids are important biomolecules which regulate key metabolic pathways and serve as precursors for synthesis of biologically important substances; moreover, amino acids are building blocks of proteins. Fish is an important dietary source of quality animal proteins and amino acids and play important role in human nutrition. In the present investigation, crude protein content and amino acid compositions of important food fishes from different habitats have been reviewed. The study showed that the cold water species are rich in lysine and aspartic acid, marine fishes in leucine, small indigenous fishes in histidine, and the carps and catfishes in glutamic acid and glycine. The enriched nutrition knowledge base would enhance the utility of fish as a source of quality animal proteins and amino acids and aid in their inclusion in dietary counseling and patient guidance for specific nutritional needs. Among the present research investigation given elaborate knowledge regarding the essential of amino acid and fatty acid in marine fishers.

Keywords: Marine fishes, amino acid, fatty acid, drugs

Study on vinegar production from vegetable and fruits

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Abstract

Vinegar is an acid liquid produced from the fermentation of ethanol in a process that yields its key ingredient, acetic acid (ethanoic acid). The acetic acid concentration typically ranges from 4% to 8% by volume for table vinegar and up to 18% for pickling. Natural vinegars contain small amounts of tartaric acid, citric acid, and other acids. Vinegar has been used since ancient times and is an important element in European, Asian, and other cuisines. The word “vinegar” derives from the Old French vinegar, meaning “sour wine”. Vinegar has been made and used for thousands of years. Vinegar is the product obtained as a result of impartial oxidation of alcohol in a fermenting sugar containing fruit or cane juice, molasses, fermented mash of malted grain, honey, syrups, etc. Vinegar is the product obtained exclusively through biotechnological processes such as double fermentation, alcoholic and acetic fermentation of liquids or other substances of agricultural origin. There are various types of vinegars obtained from various sources such as wine fruit and berry, cider, alcohol, grain, malt, beer and honey. Vinegar is used as a food additive and also it acts as effective preservative against food spoilage. Various investigators have carried out investigations on vinegar production from various raw materials such as fruits, fruit peels, and many other agricultural feed stocks. The present review summarizes research and studies carried out on vinegar production from various raw materials. Vinegar is primarily used to flavor and preserve foods and as an ingredient in salad dressings. Present study focused the vinegar production from vegetables and fruits.

Keywords: Vinegar, Alcohol, Vegetables, Fruits

Study on bioethanol production from microalgae

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Abstract

Present study covered the bioethanol production from microalgae. The microalgae for biofuel production have sparked a new dimension in the renewable fuel industry. Microalgae are fast-growing microorganisms and can be grown in diverse water sources, such as freshwater, seawater, wastewater, and brackish water. Microalgae are also able to accumulate high carbohydrate content within their cells, which can be a prospective feedstock for bioethanol production. The carbohydrate synthesized by microalgae is usually in the form of starch (without lignin), which makes it much easier to be converted to simple reducing sugar compared to lignocellulosic biomass. This study reviews the potential of bioethanol production from microalgae biomass, including the selection of microalgae species and processing of the microalgae carbohydrate to bioethanol. This study describes identification, cultivation, monitoring of carbohydrate accumulation and bioethanol production from microalgal strains from the coastal waters. Carbohydrate accumulation monitored by early stationary phase is optimal for biomass harvest. Microalgal biomass was successfully used as a carbohydrate feedstock for fermentative bioethanol production. Bioethanol production is very essential for various industrial purpose.

Keywords: Microalgae, Biomass, Fuel, Bioethanol

Anti-cancer activity from curcumin – Overview

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Abstract

Curcumin originated from India, a polyphenol extracted from *Curcuma longa* in 1815, bioactive curcuminoids (curcumin, demethoxycurcumin, and bisdemethoxycurcumin), a lipophilic polyphenol may work as an anticancer, antibiotic, and anti-aging agent as suggested by several *in vitro*, *in vivo* studies and clinical trials. Among which its anticancer potential has been the most described and still remains under investigation. Curcumin has been reported to modulate growth factors, enzymes, transcription factors, kinase, inflammatory cytokines, and proapoptotic (by upregulation) and antiapoptotic (by downregulation) proteins. This polyphenol compound, alone or combined with other agents, could represent an effective drug for cancer therapy. Cancer is the second leading cause of death in the world and one of the major public health problems. Despite the great advances in cancer therapy, the incidence and mortality rates of cancer remain high. Therefore, the quest for more efficient and less toxic cancer treatment strategies is still at the forefront of current research. Curcumin, has received great attention over the past two decades as an antioxidant, anti-inflammatory, and anticancer agent. Healthy aging and human longevity are intricate phenotypes affected by environmental factors such as physical exercise, diet, health habits, and psychosocial situations as well as genetic factors. Diet and caloric restriction have a crucial role in healthy aging. Recently, investigations on curcumin with regard to aging and age-associated disease in model organisms has described that curcumin and its metabolites, prolong the mean lifespan of some aging model organisms such as *C. elegans*, *D. melanogaster*, yeast, and mouse. It has been pro-posed to have several biological activities, such as chemo-preventive, and anti-neurodegenerative characteristics. In several studies on various model organisms it has been shown that the lifespan extension via curcumin treatment was connected with enhanced superoxide dismutase (SOD) activity, and also declined malondialdehyde (MDA) and lipofuscin levels. . The medicinal chemistry and pharmacology of curcumin and its derivatives in regard to anticancer activity, their main mechanisms of action, and cellular targets has been provided based on the literature data from the experimental and clinical evaluation of curcumin in cancer cell lines, animal models, and human subjects. In addition, the recent advances in the drug delivery systems for curcumin delivery to cancer cells have been highlighted

Keywords: Curcumin, Anticancer, Antibiotic, *C. elegans*MDA

Antifungal in vitro potential of aloe vera gel as postharvest treatment to maintain blueberry quality during storage- Overview

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Abstract

The postharvest life of most fruit and vegetables is limited by fungus proliferation. The AloeVera gel was added at different concentrations to test its antifungal potential against five fungi (*Rhizoctoniasolani*, *Curvulariahawaiiensis*, *Botryotiniafuckeliana*, *Penicilliumitalicum*, *Verticilliumdahliae*), which cause significant losses in basic agricultural products included in the world's diet: tuber potato, cereals, fruit and vegetables. The best results were for the fungus *Verticilliumdahliae*, with a mycelial growth inhibition of 100% and 70% at 200 and 100 mL/L, respectively. Satisfying results were for fungi *R. solani* and *B. fuckeliana*, where the mycelial growth inhibition exceeded 50% in them all at 200 mL/L. Antifungal activity was maintained in *B. fuckeliana* by lowering the dose to 100 mL/L. The AloeVera extract at 300 mL/L was applied as a coating in the postharvest treatment to blueberry fruit at 21 °C and 85% humidity. When the experiment ended, the percentage of rotted berries was significantly lower in the treated than in the control. The AloeVera gel could be considered a promising postharvest treatment to maintain blueberry quality and turgor during storage.

Keywords: AloeVera, Fungi, *B. fuckeliana*, Mycelium

Evaluation of antidiabetic activity of kattuyanam rice through *in vitro*, *in vivo* and *in silico* approaches

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Abstract

Diabetes is a metabolic disorder with multifaceted and intricate etiologies and hence there arise a need for managing it with options that proffers different mechanism of action. So in the present study, the methanol extract of Kattuyanam rice was studied for its antidiabetic potential through *in vitro* antidiabetic paradigm using L-6 cells followed by its potential inhibition of α -amylase and α -glucosidase enzymes and an *in vivo* antidiabetic assay in Streptozotocin induced diabetic rats. The result of the glucose uptake assay in L-6 cell line indicated that the methanol extract of Kattuyanam rice enhanced the glucose uptake by 57.41% at a dose concentration of 100 μ g/ml in comparison with the control. A significant inhibition of the pancreatic α -amylase and α -glucosidase enzymes were also noted. Similarly, in the *in vivo* study, the Kattuyanam rice extract exhibited a significant ($p < 0.001$) reduction in the levels of blood glucose, serum urea and creatinine in the diabetic induced rats. Meanwhile a significant increase in the body weight, insulin, hemoglobin and protein was observed. Further molecular docking studies indicated the conspicuous inhibitory activity of the bioactive compounds of the Kattuyanam rice against the receptor proteins such as α -amylase and α -glucosidase subjected as molecular targets. The computational studies and structural insights affirmed the potential interactions of the rice bioactive compounds and the target proteins. In conclusion, the methanol extract of Kattuyanam rice and its bioactive compounds have possessed potent antidiabetic activity with a possible mechanism of interaction with α -amylase and α -glucosidase.

Keywords: Diabetes, Management, Kattuyanam Rice, α -amylase and α -glucosidase

Cadmium Toxicity

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Abstract

Foods are the most important source of cadmium exposure for the general population. Low levels of cadmium are found in basic foodstuffs, especially grains, cereals, and leafy vegetables, which readily absorb naturally occurring cadmium or cadmium in soil contaminated by sewage sludge, fertilizers, and polluted groundwater. In 1946, the inhabitants of the Jintzu River basin in Japan were afflicted with a disease characterized by pain and bone fractures (called itai-itai or ouch-ouch disease), which was caused by high levels of cadmium in water and rice, the result of using water contaminated by discharges from a local zinc-mining operation. Cadmium bio-accumulates in the food chain; consequently, ingestion of animal internal organs, such as liver and kidneys, and some types of fish and shellfish may result in increased exposure. Cadmium concentrations in drinking water supplies are typically less than 1 microgram per litre ($\mu\text{g/L}$) or 1 part per billion (ppb). Groundwater seldom contains high levels of cadmium unless it is contaminated by mining or industrial wastewater, or seepage from hazardous waste sites. Soft or acidic water tends to dissolve cadmium and lead from water lines; cadmium levels are increased in water stagnating in household pipes. These sources have not caused clinical cadmium poisoning, but even low levels of contamination presumably contribute to the body's accumulation of cadmium.

Keywords: Cadmium, Population, Drinking, Water Poison

Green Synthesis and Characterization of Silver (Ag) Nanoparticles from Bulb Extract of *Urginea indica* (Roxb.) Kunth

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Abstract

In modern times we are facing many different problems in which, antimicrobial resistance is a serious issue that is responsible for many new diseases. This problem can be overcome by using plant-based medicines or nanomedicines instead of chemical drugs. This study is focused on phytochemical screening and green synthesis of silver (Ag) nanoparticles from *Urginea indica* (Roxb.) Kunth. It is a rare and endangered Indian medicinal plant that belongs to the Asparagaceae family which is used traditionally to cure various problems like respiratory disorders, skin problems, intestinal worms, arthritis, tumors, male sterility, whooping cough, chronic cough, pulmonary troubles, swellings, and cardiac tonic, etc. since very long. Apart from these, it has also antibacterial, antifungal, anti-cancer, antioxidant, anthelmintic, anti-inflammatory, antidiabetic, bronchodilator, and analgesic activities. For this study, firstly the bulb of *Urginea indica* was used and extracted with aqueous, methanol, and acetone solvent then these extracts were used to perform phytochemical screening which revealed that it has saponins, flavonoids, glycosides, phenolics, terpenoids, and steroids. The aqueous extract was further used for green synthesis of silver (Ag) Nanoparticles which was characterized by UV-Vis Spectrophotometer, FTIR, XRD, and TEM.

Keywords: Phytochemical, Nanoparticle, Green synthesis, Antimicrobial, Medicinal plant.

Preliminary Phytochemicals Analysis and Antimicrobial Assessment of Leaf Extract of *Dodonaea Viscosa* (L.) Jacq.

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Abstract

The plant *Dodonaea viscosa* (L.) Jacq. belongs to the family sapindaceae. The plant *Dodonaea viscosa* (L.) Jacq. was found in throughout the India. The plant is traditionally used for the treatment of rheumatism, fever, dysentery. The extracts of leaves, have antimicrobial activities and also showed antifungal, activities. The present study was assessed the phytochemical analysis of the four solvents like Ethyl acetate, acetone, Ethanol and Aqueous extracts were tested for 13 phytochemicals. Ethyl acetate contains 8 phytochemicals among the 13. Acetone contains 11 phytochemicals. Ethanol contains 04 and Aqueous contains 07 phytochemicals. The Antimicrobial activity of Ethyl acetate Sample leaves extract of *Dodonaea viscosa* (L.) Jacq. Showed higher zone of inhibition against the selected fungus *Candida albicans* (14 mm), followed by *Staph aureus* (14 mm), *Bacillus subtilis* (13 mm) *Salmonella typhi* (12 mm), *Bacillus cereus* (12 mm), *Enterococcus faecalis* (12 mm), *Klebsiella pneumoniae* (12 mm), *Serratia marcescens* (11 mm) *Escherichia coli* (10 mm) and the control microbial antibiotic Amikacin the higher inhibition zone range is (10-32 mm) and others absent. The Ethyl acetate solvent leaves extract showed the inhibition zone by *Bacillus cereus* (11 mm), *Enterococcus faecalis* (10 mm), *Staph aureus* (07 mm), *Escherichia coli* (07 mm), *Klebsiella pneumoniae* (07 mm) others absent. The Acetone sample leaves extract of *Dodonaea viscosa* (L.) Jacq. Showed higher zone of inhibition by fungi like *Candida albicans* (11 mm) and followed by the bacterial inhibition produced by *Bacillus cereus* (14 mm), *Escherichia coli* (13 mm), *Salmonella typhi* (13 mm), *Klebsiella pneumoniae* (12 mm), *Enterococcus faecalis* (11 mm), *Bacillus subtilis* (09 mm), *Staph aureus* (09 mm) and *Serratia marcescens* zone is absent. The Acetone sample leaves extract Showed higher zone of inhibition produced by *Bacillus cereus* (07 mm), *Escherichia coli* (07 mm) and others absent. In this study it is obvious that the species *Dodonaea viscosa* (L.) Jacq. found to be a great source of various medicinally important bioactive compounds.

Keywords: Antimicrobial activity, Phytochemical analysis, *Dodonaea*, Medicinal plant.

Applications of Nanotechnology in Immunology

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Abstract

Nanotechnology is expanding rapidly in the modern days. Nanotechnology deals with the understanding and control of matter at dimensions between approximately 1 and 100 nanometers, where unique phenomena enable novel applications in the field of immunology. Nanoparticles can cause chronic health effects. Viruses and DNA are examples of natural objects on the nanoscale. Numerous benefits of nanotechnology are available in many scientific domains. In this sense, nanoparticles serve as the fundamental foundation of nanotechnology. Fullerenes have a direct immunosuppressive effect but can also deliver immunosuppressive drugs, as can dendrimers, polymers, and liposomes. Recent developments in nanotechnology have demonstrated that nanoparticles have enormous promise for use in almost every field of life sciences and immunology.

Keywords: Viruses, DNA, Nanotechnology

Human Immunity Prediction Using Machine Learning Algorithms

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Abstract

The human immune system is a complex network of cells, tissues, and organs that work together to protect the body from pathogens, such as viruses and bacteria. A person's immune system can be influenced by various factors, including genetics, environment, lifestyle, and medical history. Predicting a person's immunity level can be useful in identifying individuals who may be more susceptible to infections or diseases. Machine learning algorithms have shown promise in predicting immune response, which could have significant implications for personalized medicine and disease prevention. One approach to predicting immunity is to use machine learning algorithms to analyze large datasets of immune-related biomarkers. For example, a recent study used machine learning to analyze gene expression data from the blood samples of patients with COVID-19. The researchers found that machine learning algorithms could accurately predict which patients would develop severe symptoms and require hospitalization based on their immune profiles. The study's findings suggest that machine learning could be a powerful tool for predicting immunity to COVID-19 and other infectious diseases. Another approach to predicting immunity is to use machine learning algorithms to analyze data from immune-related sensors or wearable devices. For example, a recent study used machine learning to analyze data from a wearable biosensor that measures a person's skin temperature, heart rate, and other physiological parameters. The researchers found that machine learning algorithms could accurately predict a person's immune response to a flu vaccine based on their wearable device data. The study's findings suggest that wearable devices could be used to monitor a person's immune response and predict their susceptibility to infectious diseases. Machine learning algorithms can also be used to analyze medical records and other health data to predict immunity levels. For example, a recent study used machine learning to analyze electronic health records to predict a person's risk of developing sepsis, a life-threatening condition caused by an overactive immune response to an infection. The researchers found that machine learning algorithms could accurately predict sepsis risk based on a person's medical history, including their age, sex, and prior medical conditions. The study's findings suggest that machine learning could be used to identify individuals at high risk of sepsis and intervene before the condition becomes life-threatening. There are, however, some challenges associated with using machine learning algorithms to predict immunity. One challenge is the lack of standardized biomarkers and immune profiles across different studies and populations. Additionally, machine learning algorithms require large datasets to train and validate, which can be difficult to obtain for certain immune-related conditions. Finally, there is a need for further research to establish the accuracy and reliability of machine learning algorithms for predicting immunity in real-world settings. Machine learning algorithms have shown promise in predicting immunity levels, which could have significant implications for personalized medicine and disease prevention. The ability to predict a person's immune response to infectious diseases could help identify individuals who are more susceptible to infections and enable targeted interventions to improve their health outcomes. However, further research is needed to address the challenges associated with using machine learning for predicting immunity and to establish the accuracy and reliability of these algorithms in real-world settings.

Keywords: P. fluorescens, Reverse vaccinology and Vaccine

A Survey on the Terrestrial Fungi Flora in Vadachennimalai Hill, Salem District, Tamil Nadu, India

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Abstract

The present investigation was carried out with the survey on fungi flora in Vadachennimalai Hill, Thalaivasal Taluk, Salem District, Tamil Nadu, India. In this study, 17 species of fungus are identified, further it is confirmed that the stress factors and humidity plays a major role in the ecology and distribution of mycological flora. During the rainy season, particularly in October and November months, the fungi flora was observed with higher frequency of growth and large in numbers. Finally, it is concluded that the investigation needs more economical assistance by keeping the view on its medicinal importance.

Keywords: Eastern Ghats, Vadachennimalai, Fungus, Biodiversity, Conservation.

Computational analysis of iron-binding proteins in *Lichtheimia corymbifera*

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Abstract

Mucormycosis, also called black fungus disease, is a life-threatening infection that targets diabetic patients with ketoacidosis, immunocompromised patients, and immunocompetent patients after trauma exposure to contaminated soil. The current infection rate of mucormycosis cases is rising in developing and developed countries. Unfortunately, a limited number of treatment options are available. *Lichtheimia corymbifera* is one among the group of mucormycosis fungi. It is one of the common causative agents of black fungus disease. In Europe, it is the second most common cause of mucormycosis and 5% of all mucormycosis in the USA. Inhalation of asexual spores (sporangiospores) is the major cause of infection. Iron is a vital metal needed for the sustenance of predominant microorganisms. It acts as a cofactor for various enzymes and involves electron transfer. In opportunistic fungi pathogenicity, the iron acquisition is an important mechanism. Therefore, it is a pressing need to study the iron-binding proteins in opportunistic fungal pathogenicity. Our study aimed to identify the putative iron-binding proteins from *Lichtheimia corymbifera*. Additionally, we have also characterized the identified iron-binding proteins. The information gleaned from our study will pave the way to understanding iron acquisition which helps to devise the control measures against this life-threatening disease.

Keywords: *Lichtheimia corymbifera*, Mucormycosis, Black fungus, Iron-binding proteins.

In silico identification of iron-binding proteins in *Rhizopus arrhizus*

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Abstract

The black fungus, also known as Mucormycosis, is a rare and life-threatening infection with broad clinical indexes that make its treatment and diagnosis problematic. The current literature indicates that mucormycosis case incidences are on the rise in developing and developed countries, and, unfortunately, only limited treatments are available. Among the group of mucormycosis fungi, *Rhizopus arrhizus* is one of the common causative agent of black fungus disease. This deadly fungal pathogen spreads through inhalation of spores, features invasive hyphae, and prominently invades and occludes blood vessels resulting in infarcts and hematogenous dissemination. Iron is a critical transition metal needed for predominant microorganisms. This is being used in the electron transfer process during the metabolic responses. Iron acquisition is a vital and significant process for opportunistic fungi pathogenicity. Therefore, the study of iron-binding proteins is the need of the hour. In this study, we have computationally predicted putative iron-binding proteins from *Rhizopus oryzae*. Further, these iron-binding proteins are subjected to various bioinformatics characterization. Our study would shed light on formulating treatment measures against this deadly disease.

Keywords: *Rhizopus arrhizus*, Mucormycosis, Black fungus, Iron-binding proteins.

Bioinformatics prediction of iron-binding proteins in *Apophysomyces elegans*

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Abstract

Apophysomyces elegans is considered a medically important but rare zygomycete, also called black fungus disease. It exhibits broad clinical symptoms that lead to difficulties in diagnosis and treatment. The most common symptoms are cutaneous and subcutaneous localizations following trauma, burn, invasive procedures, or natural disasters. This pathogen enters our body through traumatic implantations connected with soil or decaying vegetable matter. Iron commonly exists in the form of heme-iron-sulfur clusters, which are most needed for a wide range of vital biochemical processes, such as the reduction of atmospheric nitrogen, the synthesis of deoxyribonucleotides, respiration, the tricarboxylic acid cycle, and the synthesis of numerous small molecules such as amino acids, lipids, and sterols. Iron acquisition is a significant mechanism that confers fungal pathogenicity. Therefore, the study of iron-binding proteins is a pressing need. Our study identified and profiled putative iron-binding proteins from *Apophysomyces elegans*. In addition to that, we have also characterized these iron-binding proteins. Our study would open a new avenue to formulate precise treatment measures against this deadly disease.

Keywords: *Apophysomyces elegans*, Mucormycosis, Black fungus, Iron-binding proteins.

Bioinformatics studies of iron-binding proteins in *Rhizomucor pusillus*

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Abstract

Black fungus is an invasive fungal infection with high mortality rates mainly caused by ubiquitous filamentous opportunistic fungi. These opportunistic fungi target immunosuppressed patients. *Rhizomucor pusillus* is a causative agent of Sinus-orbital zygomycosis. It mainly targets patients with acute myelogenous leukemia. Decaying plants and animals harbors this opportunistic fungus. It becomes a severe life-threatening disease that spreads worldwide in developed and developing countries. Minimal treatment measures are available to treat this deadly disease. This fungal disease exhibits a wide range of lesions in the epidermis, hair, and nails. Iron is an important micronutrient that acts as a cofactor for numerous enzymes, making it indispensable for a wide range of microorganisms. Iron acquisition is an essential molecular mechanism in opportunistic fungi that confers pathogenicity. Therefore, we attempted to identify the iron-binding proteins from *Rhizomucor pusillus* using a systematic bioinformatics approach. Our study identified a significant number of iron-binding proteins from this deadly fungi. Further, these proteins are subjected to InSilco characterization. Our comprehensive analysis yielded significant results, which can be used to formulate precise control measures against this devastating disease.

Keywords: *Rhizomucor pusillus*, Mucormycosis, Black fungus, Iron-binding proteins.

Computational identification of putative iron-binding proteins of *Rhizomucor miehei*

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Abstract

Mucormycetes, a group of molds, cause Mucormycosis, also called black fungus, which is a deadly disease. It generally affects the sinuses, lungs, skin, and brain. It enters the body through the inhalation of mold spores. It also spreads when it comes into contact with them in soil, rotting produce or bread, or compost piles. *Rhizomucor miehei* infection leading to cerebral infarction diagnosed from peripheral blood, cerebral spinal fluid, and bronchoalveolar lavage fluid. Roughly one-third of all proteins have a metal co-factor, and these proteins are called metalloproteins. These proteins are indispensable in regulating various biological, cellular, and structural functions in prokaryotes and eukaryotic organisms. Iron plays a vital role in protein-bound metals as a co-factor that conjugates with numerous enzymes, giving structural integrity and facilitating several biological processes such as metabolic, transport, and cell signaling. It is a vital micronutrient but can be toxic at higher concentrations to organisms. Despite one of the vital co-factors, very few studies were conducted on these iron-binding proteins; therefore, the present study predicted the iron-binding proteins of *Rhizomucor miehei* and computationally characterized them. Our study also elucidated the link between iron-binding proteins involved in the pathogenicity of this deadly black fungus disease.

Keywords: *Rhizomucor miehei*, Mucormycosis, Black fungus, Iron-binding proteins.

Prospects on Biological Removal of chromium from wastewater

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Abstract

Current industrial use and marketable processes liberate a group of chromium into the atmosphere (soil, water, environment) and consequential in severe problem to human for the reason that of their toxicity. The Biological elimination offers a substitute to traditional physico-chemical methods. This is considered as a sustainable expertise of minor crash on the environment. The highly challenging microorganisms (bacteria, fungi, and algae) have been most widely studied from this characteristic. Numerous mechanisms were industrial by microorganisms to compact with chromium toxicity. These apparatus comprise biotransformation, bioaccumulation and/or biosorption, and are measured as a substitute to eliminate the heavy metal. The aim of this review is summarize chromium bioremediation machinery leaning on realistic applications at better level techniques. In the similar way, the mainly applicable outcome of numerous trials focused on development viability and the healthiness of diverse systems intended for chromium elimination. The biological removal of chromium by combined carbon activated sludge system. Currently, the advanced technologies are applied for the removal of chromium from wastewater.

Keywords: Chromium, bio elimination, wastewater, better technologies

Screening of Bio Enzyme from Marine *Streptomyces* Species

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Abstract

In this study aim to screening of Bioenzymes from marine *Strptomyces* Species, Soil Samples were collected from the different region of the Muthupet Mangrove ecosystem and isolation of actinobacteria was performed by soil dilution plate technique using Starch casin agar medium. The characterization of the isolates was done to established the indiginous nature of the mangrove actinobacteria and *Streptomyces* species proved a rich source of amylase, glycoamycos and glucose oxidase activity. The Taxanomial characterization of physiological, morpohological and biochemical features has been supporting original observation of *Streptomyces*. However, a selection or screening methods has to be tailored for amylase production was confirmed by *Streptomyces* SP. MIAT. This species was selected for further mass production of desired bioenzymes.

Keywords: *Streptomyces*, marine soil, glucose oxidase, amylase, glucoamylase

Species Composition and Varietal Susceptibility of Mango Leaf hopper on different Varieties of Mango in Jammu Region

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Abstract

Studies were conducted on Mango leaf hoppers for the whole year to analyze the presence of different species of mango leaf hoppers and to find out the susceptibility of these hoppers on five different varieties of mango viz. Dasehari, Langra, Malda, Amarpalli and Wild in Nagbani area of Jammu region. Two species of Mango leaf hoppers viz. *Idioscopusclypealis* and *Amritodusatkinsoni* were reported infesting different mango varieties in Jammu region. Studies also revealed the dominance of *Idioscopusclypealis* for the first 6 months of experimentation, whereas in the next 6 months *Amritodusatkinsoni* dominated *I. clypealis*. A wide degree of variability was seen among mango cultivars during the study period. The yield of cultivars Langda and Malda remained high and the damage caused by these hoppers on these varieties was found to be less hence declared less susceptible to mango hoppers as compared to Dasehari where the yield was comparatively less hence proved to be moderately affected by these mango leaf hoppers; although wild mango and Amarpalli were the most susceptible ones and faced significant yield loss because of heavy infestation caused by these hoppers.

Keywords: Mango Leaf hopper, Varietal Susceptibility, Mango, Adult, Jammu.

Preparation of red wine from paneer rose petals

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Abstract

The Project mainly Focus on Preparation of Red Wine from Paneer Rose Petals as this can be alternative for the traditional or old method of preparing of Wine i.e., from grapes. The fresh Rose Petals are easily available at anytime in the year so the production of the wine can be done anytime. Also, Method of Production of this Wine is easy and cost of production is cheap. The Quality wine can be made only from quality raw materials. The rose petals wine is prepared from the right quality of flowers (Rose Petals). This rose petals wines are exotic wines, and can be consumed by Vegetarian and non-vegetarian peoples. These Wines are considered good to be consumed with light foods items particularly Clear Soups, Salads, Continentals Foods, and Sandwiches. The best served is with Saffron (Kesar), Cardamon, Sweet Basil, Nutmeg and Mango etc.

Keywords: Red Wine, Rose Petals, Grapes.

Studies on purification and characterization of chitinase from *trichoderma viride* N9 and its antifungal activity against phytopathogenic fungi

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Abstract

A chitinase produced by *Trichoderma viride* N9 isolated from a soil sample collected from Nallamala forest, India, was purified and characterized. The enzyme was purified by ammonium sulphate precipitation, DEAE-cellulose ion-exchange chromatography and sephadex G-100 gel filtration. The molecular mass of the purified chitinase was estimated to be 46 kDa by SDS-PAGE. It was optimally active at pH of 4 and at 40°C. The enzyme was stable from pH 3 to 6, and up to 50°C. Among the metals that were tested, the Fe²⁺, Hg²⁺, Mn²⁺ and Co²⁺ completely inhibited the enzyme activity. The enzyme was less sensitive to Al³⁺, Ca²⁺, Cu²⁺, and Zn²⁺. The purified chitinase showed antifungal activity against phytopathogenic fungi.

Keywords: chitinase, chromatography

Anti microbial screening of euphorbia hirta L. and pedalium murex L. a comparative study

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Abstract

Medicinal plants have been used for centuries as remedies for human diseases because they contain components of therapeutic value. Herbal medicine is still mainstay of about 75-80% of the whole population, mainly in developing countries, for primary health care because of better cultural acceptability, better compatibility with the human body and fewer side effects. Euphorbia hirta (amman pacharisi) is a small perennial herb which belongs to the family of Euphorbiaceae and it is used to treat bronchitic asthma, ameoboidal dysentery and laryngeal spasm. Pedalium murex (yanai nerunjil) is a much-branched annual herb. This belongs to the family of Pedaliaceae and is used to treat gonohorrea, urinary tract infections and spermatohorrea. The present study is to compare the antibacterial and antifungal activity of aqueous and organic solvent leaf extracts of Euphorbia hirta and Pedalium murex. The antimicrobial assay is done by disc diffusion method against bacterial species

Keywords: Anti microbial, Herbal

Sensitivity patterns of some flowering plants against *Salmonella typhi* and *Pseudomonas aeruginosa*

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Abstract

The medicinal plants have been collected from wild resources and only some species used in larger quantities are cultivated systematically. Many medicinal plants, which were ignored in the past years, but the number of plants still found in the wild is progressively declining the medicinal value with this situation to acquiring from the wild sources in more important recent trends. Reported increasingly the antimicrobial properties of medicinal plants from different parts of the world. On this basis, the present investigation was focused on the screening of antimicrobial properties of *Asystasia indica*, *Asystasia gangetica*, *Thunbergia alata* on selected Pathogenic bacteria. The main objectives of this work use as follow To Screen the antimicrobial properties of these plants on selected micro organisms. To determine the effectiveness of inhibition on microbes by comparing its activity with known antibiotics.

Keywords: *Pseudomonas aeruginosa*, antimicrobial

In-vivo toxicological (acute) characterization of bio-synthesized silver nanoparticles in *labeo rohita*

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Abstract

This study extensively investigated to find out the in-vivo acute toxicity and lethal concentration (LC50) of biosynthesized Ag NPs in *Labeo rohita* (*L. rohita*). The haematological studies and antioxidative responses were considered in three tissues such as gill, liver and muscle of *L. rohita*. The results of this study showed that increasing the dose of Ag NPs led to bioaccumulation in the tissues. The haematological analysis showed considerable alterations in the Ag NPs-treated fish. The impact of histological changes induced by Ag NPs were confirmed by the damages in the tissues, primary lamella, blood vessels and formation of vacuolation in liver and muscle when compared with the control *L. rohita*.

Keywords: *Labeo rohita* (*L. rohita*), nanoparticles

Antidiabetic and hypolipidemic activity of brassica oleracea l. leaf in albino rats

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Abstract

To evaluate the anti diabetic activities of methanolic Leaf and Stem extracts of Brassica oleracea in alloxan-induced diabetic rats. Group I served as Normal untreated rats. Group II served as Normal rats were administered with Brassica oleracea L. extract Group III served as Diabetic control Group IV served as Diabetic rats were administered with Brassica oleracea L. extract 500mg/kg body weight in aqueous solution daily for 30 days. Group V served as Diabetic rats were administered glibenclamide 600µg/kg body weight in aqueous solution daily for 30 days. The results of the study indicates that Brassica oleracea extract significantly

Keywords: Diabetic rats, Brassica oleracea L.

Nutritional Value of *Eclipta prostrata* and evaluation of its efficacy in rats

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Abstract

In the present study aimed to evaluate the nutritional value of *Eclipta prostrata* and evaluation of its efficacy in rats. The preliminary phytochemical analysis of the leaves of *Eclipta prostrata* revealed presence of Flavonoids, phenolics, steroids, tannin, saponins, glycosides, terpenoids, phlobatannins. Steroids, alkaloids and anthroquinones. Phytochemicals further confirmed by histochemicals. Significant amount of minerals were found in the *Eclipta prostrata* leaf. Vitamin C and E were found to be in *Eclipta prostrata* leaf. Improved the antioxidant and hematological parameters in rats. Overall, the *Eclipta prostrata* leaves are a rich source of phytochemicals that can be important in disease preservation. Some of these phytochemical such as Alkaloids, Flavonoids, Tannins, Saponin, Glycosides, Cardiac glycosides, Terpenoids and polyphenolic compounds have possessed biological activity

Keywords: *Eclipta prostrata*, Flavonoids

Immunomodulatory effect of Probiotics on Alloxan induced diabetes mellitus fish *Channa punctata*

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Abstract

Diabetes mellitus, the looming epidemic metabolic disorders across the world. It is an established major independent risk factor for several chronic diseases such as ischemic heart disease and stroke. Fish are good for your health in more ways than you may expect. For one, eating fish is a common dietary recommendation for a healthy diet. However, fish have much more to provide than omega-3 fatty acids to your circulatory system. Some fish species now serve as important and innovative model systems for diabetes research, providing novel and unique advantages compared with classical research models. Not surprisingly, the largest share of diabetes research in fish occurs in the laboratory workhorse among fish, the *Channa punctata* (Bloch, 1793) used as a genetic model system to study development, have emerged as an important model system for metabolic diseases, including diabetes mellitus. In this review, we highlight the practicability of using *Channa punctata* (Bloch, 1793) to study diabetes and hyperglycemia, and summarize some of the recent research and breakthroughs made using this model. Equally exciting is the appearance of another emerging discipline, one that is taking advantage of evolution by studying cases of naturally occurring insulin resistance in fish species. We briefly discuss the importance of probiotic as Immunomodulator to treat diabetes in this review. In this context probiotic supplements proven to be an alternative one.

Keywords: *Channa punctata*, hyperglycemia, metabolic disorders, probiotic

Role of *withania somnifera* in nerve repair medicine

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Abstract

Withaniasomnifera Dunal popularly known as Indian ginseng, winter cherry, ashvagandha or jagandha, has been in use for more than 2500 years in ayurvedic medicine to treat several neurological disorders. In India *W.somnifera* is found in waste lands and also cultivated in field areas of M.P., Rajasthan etc. The multiple uses of *W.somnifera* are as Indian folk tonic, as stress reliever, natural viagra, antioxidant, nerve repairing, anti-cancer, boost libido, improve sleep quality, helps with PMS & menopause and natural fertility booster. The systematic review was done on neuro-behavioral parameters. It enhances the function of the brain & nervous system and improves memory, it also improves the function of the reproductive system promoting a healthy sexual and reproductive balance. Being a powerful adaptogen, it enhances the body's resilience to stress. Some other health benefits of *W.somnifera* (ashvagandha) are help to relieve stress and anxiety, lower blood sugar and fat, increase muscle strength, improves sexual functions in women, boosts fertility and testosterone levels in men, sharpens focus and memory, supports heart health.

Keyword: *Withaniasomnifera*, indian ginseng, natural viagra, natural fertility.

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