

PROGRESS REPORT

TWO DAY NATIONAL LEVEL SEMINAR ON

**"Role of Basic Sciences in Translational Research
applied on Biological Sciences and Human Health".**

5th to 6th February, 2018

Sponsored by



Science and Engineering Research Board
DST, Govt. of India

Organised by



MIDNAPORE CITY COLLEGE

(Recognised by UGC, Govt. of India & Affiliated to Vidyasagar University)

Midnapore, Paschim Medinipur, Pin- 721 129, West Bengal, India

www.mcconline.org.in | director@mcconline.org.in

PROGRESS OF THE SEMINAR

Participant Details

Total No. of Students (UG & PG)	:	242
Total No. of Research Scholar	:	15
Total No. of Faculty	:	38
Total No. of Participant	:	295

Speaker Details

J. Sreenivasa Rao

Scientist D & Asst. Director, Department of Food Chemistry, National Institute of Nutrition (NIN), Hyderabad.

Prof. Debidas Ghosh

Professor, Department of Biomedical Lab Science & Management, Vidyasagar University.

Dr. Arup Banerjee

Research Scientist D, Translational Health Science & Technology Institute.

Prof. Madhusudan Das

Professor, Department of Zoology, Dean, Faculty Council of Post Graduate Studies in Science, The University of Calcutta.

Prof. Sukhen Das

Professor, Department of Physics, Jadavpur University.

Dr. Jayashree Laha

Principal, Raja N L Khan Women's College.

Dr. Dilip Kumar Nandi

Associate Professor, Department of Physiology, Raja N.L. Khan Women's College, Midnapore.

Prof. Chandradipa Ghosh

Professor, Department of Physiology, Vidyasagar University.

Dr. Sukhendu Kar

Assistant Professor, Department of Mathematics, Jadavpur University.

Dr. Atiskumar Chattopadhyay

Secretary, Faculty Council of Science, Jadavpur University.

Dr. Mantu Kumar Das

Associate Professor, Garhbeta College.

Dr. Keshab Chandra Mondal

Associate Professor, Department of Microbiology, Vidyasagar University.

Dr. Sandip Chattopadhyay

Assistant professor, Department of Bio-Medical Laboratory Science & Management, Vidyasagar University.

Dr. Pradip Das Mahapatra

Assistant Professor, Department of Microbiology, Vidyasagar University.

Dr. Tapanendu Kamilya

Assistant Professor, Department of Physics, Narajol Raj College.

SEMINAR LEAFLET



Two days National Level Seminar on

*"Role of Basic Sciences in Translational Research
applied on Biological Sciences
and
Human Health".*

Sponsored by:



SCIENCE & ENGINEERING RESEARCH BOARD
Department of Science & Technology, Govt. of India

*Change is the end result
of all true learning.*

5th -6th February, 2018

Venue: Seminar Hall

MIDNAPORE CITY COLLEGE

(Recognised by Higher Education Department, Govt. of West Bengal & Affiliated to Vidyasagar University)

**Campus: Midnapore, Paschim Medinipur,
Pin- 721 129, West Bengal, India**

Theme of the Seminar

Translational research is defined as an interdisciplinary branch of the biological sciences, which applies findings from basic science to enhance human health and well-being. It aims to "translate" findings in fundamental research into medical practice and meaningful health outcomes. Translational research is an interdisciplinary branch of the biomedical field supported by three main pillars: bench-side, bedside and community. Implementation of basic science research is applied to produce new drugs, devices, new mathematical equations new statistical theories and treatment options for patients. There are two areas of translations: one is process of applying discoveries generated during research in the laboratory, & in second, area of translation concern the best practices in the community.

This seminar focus to translate novel "bench to bedside" science into clinical therapies as well as report upon prognostics, novel therapeutic strategies, and biomarker development.

Areas covered by the Seminar:

- To understand molecular mechanisms of diseases.
- To translate this knowledge into novel therapies.
- To integrate Physical, biological, Mathematical and other applied sciences in pursuit of the mission
- To meet the growing scientific challenges of Life Sciences Industry through cutting edge research with emphasis on focus areas as follows
- To gain the knowledge about diet and nutrition for prevention and cure the diseases.
- Advance frontiers of science by generating new knowledge, including valuable intellectual property.
- Develop new concepts and tools for use in drug discovery
- Provide solutions to specific problems faced by industry and society

Develop high quality human resource for pursuit of advanced research in life sciences.

About the College

MORaine Human Resource Development Organization was established this year as a self-financing degree college in the name of Midnapore City College (MCC) with the sole aim to serve the people by imparting quality education. We got recognition from West Bengal Higher Education Department, Govt. of West Bengal & Approved from Vidyasagar University. MCC is aiming at imparting value-based education to students. This Institute is situated in a pristine location at Bhadutola, Paschim Medinipur, and West Bengal amidst Shantiniketan atmosphere. The promises a rich campus with perfect surroundings for students to study. Bhadutola is only two km distance from Midnapore Town which provides all the required facility to the students within close proximity to college. The college offering 12 Undergraduate courses and 8 Post graduate courses having honours and master degree in different disciplines in Arts and Science.

Invitation from the Desk of the Organizing Committee:

We have the honour and great privilege to inform all concern of people including Scientists, Academicians, Doctors, Health professionals, Researchers, Microbiologists, Nutritionists, Students, Industry, NGO Representatives from all part of our country to attend the National Seminar entitled “**Role of Basic Sciences in Translational Research applied on Biological Sciences and Human Health**”.

You are cordially invited to participate

GUIDELINES OF ABSTRACT SUBMISSION

Abstract for oral and poster presentation (within 250 words) may be sent by email to: director@mcconline.org.in

All the communications should be made by email only. Abstract must contain: Background, Objectives, Methods, Results and Conclusion.

The format of abstract: text in MS Word with Times New Roman and 1.5 spacing, Title: all capital, bold, 14pt,

Author (s): bold, 12 pt, Address: (11pt) e-mail: only one email of Corresponding author should be provided, Abstract body: (12pt). Complete sentences, active verbs, and the third person should be used, and the abstract should be written in the past tense. Keywords: upto 6 to 8 (12pt).

CALL FULL PAPERS FOR SEMINAR PROCEEDINGS

Our Institutional academic journal "Journal of Applied and Social Science" will be published supplementary issue of seminar proceeding.

Author instruction available on <http://www.mcconline.org.in>.

(Note: Full papers would be reviewed under Review committee and then published in Supplementary Issue in March, 2018).

GUIDELINES OF POSTER PRESENTATION

Poster size will be strict 24cm×30 cm (Width/Height).

AWARDS

Poster Presentation: Best two posters would be selected for award separately in UG and PG students.

Oral Presentation: Best two oral presentation would be selected and awarded from Research Scholar.

ROUTE MAP

Distance of the venue from Midnapore Railway Station is 6 Km. The distance between Midnapore Central bus stand via Keranichati near Bhadutola is 5 km.

REGISTRATION FEE

	Within 20.01.2018	Spot Registration
Students (UG/PG)/ Research Scholar	Rs. 400.00	Rs. 500.00
Teachers/ Scientists/ Delegates	Rs. 600.00	Rs. 700.00

REGISTRATION AND MODE OF PAYMENT

Registration Form will be available from our college website: www.mcconline.org.in. & Registration Fees will be paid in the Bank Account.

Bank Name: **United Bank of India**
Account No.: **0297050310154**
Branch Name: **Satbankura (0297)**
IFSC: **UTBIOSBK933**

ACCOMMODATION

Modest accommodation will be provided in the nearest guest house/ hotels for the delegates on request. Accommodation may be booked on payment basis.

	AC	NON-AC	Dormitory
Students (UG/PG)/ Research Scholar	-- -- --	Rs. 250.00	Rs. 150.00
Teachers/ Scientists/ Delegates	Rs. 1100.00	Rs. 600.00	-- -- --

IMPORTANT DATES

Last date for submission of Abstract : 25.01.2018

Last date for submission of Research paper for
Seminar proceeding : 25.01.2018

Organizing Committee

Chief Patron

Dr. Pravas Ghosh, Chairman

Patron

Dr. Pradip Ghosh, Founder Director

Convenor

Suchismita Roy,
Assistant Professor, Dept. of Nutrition & Dietetics

Organizing secretary & Joint Convenor

Dr. Shrabani Pradhan,
Assistant Professor, Dept. of Nutrition & Dietetics

Seminar Coordinator

Dr. Sudipta Chakrabarti,
Principal

Organizing Secretary (Joint)

Dr. Sangita Dutta Maity,
Assistant Professor, Dept. of Zoology

Seminar Co-ordinator (Joint)

Prof. Nayan Hazra, Assistant Professor,
Dept. of Geography

Convenors for Invitation

Prof. Jaganath Samanta,
Assistant Professor, Dept. of Education,

Prof. Prasenjit Maity, Dept. of Geography

Convenors for Printing & Publication

Prof. Biswajit Das, Assistant Professor, Dept. of Zoology

Prof. Arpita Raj, Assistant Professor, Dept. of English

Convenors for Refreshment

Prof. Shilpa Dinda, Assistant Professor, Dept. of Botany

Mr. Suman Mallick

Mr. Prabir Roy.

Convenors for Transport & Accommodation

Miss Titli Panchali, Dept. of Nutrition

Mr. Abhishek Das

Mr. Subrata Manna

Advisory Committee

J. Sreenivasa Rao

Scientist D & Asst. Director,
Department of Food Chemistry,
National Institute of Nutrition (NIN),
Hyderabad.

Prof. Debidas Ghosh

Professor, Department of Biomedical
Lab Science & Management,
Vidyasagar University.

Dr. Arup Banerjee

Research Scientist D, Translational
Health Science & Technology
Institute.

Prof. Madhusudan Das

Professor, Department of Zoology,
Dean, Faculty Council of Post
Graduate Studies in Science,
University of Calcutta.

Prof. Sukhen Das,

Professor, Department of
Physics, Jadavpur University

Dr. Jayashree Laha

Principal, Raja N L Khan Women's
College

Dr. Dilip Kumar Nandi,

Associate Professor,
Department of Physiology, Raja N.L.
Khan Women's College, Midnapore.

Prof. Chandradipa Ghosh

Professor, Department of
Physiology, Vidyasagar University.

Dr. Sukhendu Kar

Assistant Professor,
Department of Mathematics, Jadavpur
University

Dr. Atiskumar Chattopadhyay

Secretary, Faculty Council of Science,
Jadavpur University.

Dr. Mantu Kumar Das,

Associate Professor, Garhbeta College

Dr. Keshab Chandra Mondal

Associate Professor,
Department of
Microbiology, Vidyasagar University

Dr. Sandip Chattopadhyay

Assistant professor, Department of
Bio-Medical Laboratory Science &
Management, Vidyasagar University

Dr. Pradip Das Mahapatra

Assistant Professor,
Department of
Microbiology, Vidyasagar University

Dr. Tapanendu Kamilya,

Assistant Professor, Department of
Physics

Visit us at:
www.mcconline.org.in

List of Invited Speaker

J. Sreenivasa Rao

Scientist D & Asst. Director, Department of Food Chemistry.

Prof. Debidas Ghosh

Professor, Department of Biomedical Lab Science & Management.

Dr. Arup Banerjee

Research Scientist D, Translational Health Science & Technology Institute.

Prof. Madhusudan Das

Professor, Department of Zoology, Dean, Faculty Council of Post Graduate Studies in Science.

Prof. Sukhen Das

Professor, Department of Physics.

Dr. Jayashree Laha

Principal, Raja N L Khan Women's College

Dr. Dilip Kumar Nandi

Associate Professor, Department of Physiology.

Prof. Chandradipa Ghosh

Professor, Department of Physiology.

Dr. Sukhendu Kar

Assistant Professor, Department of Mathematics.

Dr. Atiskumar Chattopadhyay

Secretary, Faculty Council of Science.

Dr. Mantu Kumar Das

Associate Professor, Garhbeta College

Dr. Keshab Chandra Mondal

Associate Professor, Department of Microbiology.

Dr. Sandip Chattopadhyay

Assistant professor, Department of Bio-Medical Laboratory Science & Management.

Dr. Pradip Das Mahapatra

Assistant Professor, Department of Microbiology.

Dr. Tapanendu Kamilya

Assistant Professor, Department of Physics.



MIDNAPORE CITY COLLEGE

(Recognised by Higher Education Department, Govt. of West Bengal & Affiliated to Vidyasagar University)

**Campus: Midnapore, Paschim Medinipur,
Pin- 721 129, West Bengal, India**

For any query please contact:

Dr. Shrabani Pradhan (Organizing Secretary)

9474156269, 7908223785

FIRST DAY OF SEMINAR









SECOND DAY OF SEMINAR







TWO DAYS NATIONAL LEVEL SEMINAR ON

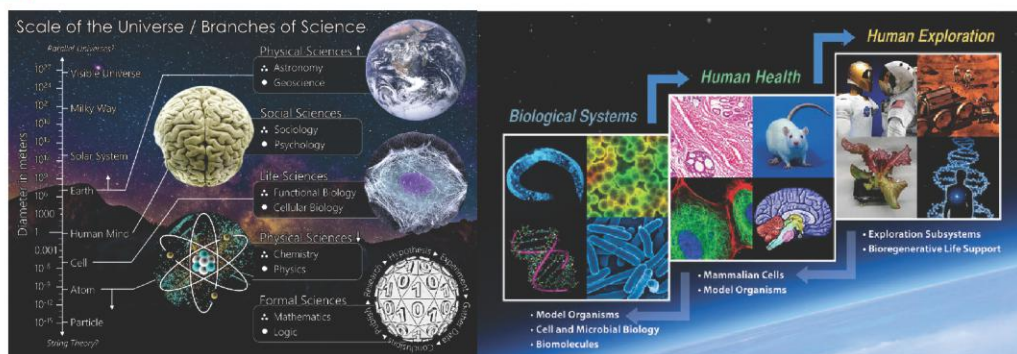
"Role of Basic Sciences in Translational Research applied on Biological Sciences and Human Health".

5TH TO 6TH FEBRUARY, 2018

Sponsored by



Science and Engineering Research Board
DST, Govt. of India



MIDNAPORE CITY COLLEGE

(Recognised by Higher Education Department, Govt. of West Bengal & Affiliated to Vidyasagar University)

Midnapore, Paschim Medinipur, Pin- 721 129, West Bengal, India

www.mcconline.org.in | director@mcconline.org.in

TWO DAY NATIONAL LEVEL SEMINAR ON
"Role of Basic Sciences in Translational Research
applied on Biological Sciences and Human Health".

5th to 6th February, 2018

Sponsored by



Science and Engineering Research Board
DST, Govt. of India

SOUVENIR

Organised by



MIDNAPORE CITY COLLEGE

(Recognised by Higher Education Department, Govt. of West Bengal & Affiliated to Vidyasagar University)

Midnapore, Paschim Medinipur, Pin- 721 129, West Bengal, India

www.mcconline.org.in | director@mcconline.org.in

মমতা ব্যানার্জী
মমতা বৈনর্জী
ممتا بنرجی
Mamata Banerjee



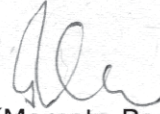
মুখ্যমন্ত্রী, পশ্চিমবঙ্গ
मुख्यमंत्री, पश्चिम बंगाल
وزیر اعلیٰ مغربی بنگال
CHIEF MINISTER, WEST BENGAL

1st February, 2018

MESSAGE

I am glad to know that **Midnapore City College** will organize a two-day **National Seminar** on 'Role of Basic Sciences in translational Research applied on Biological Sciences and Human Health' at the college premises at Medinipur town on 5th & 6th February, 2018.

I convey my heartiest greetings and best wishes to all concerned on the occasion and wish the event all success.


(Mamata Banerjee)

Dr. Sudipta Chakrabarti
Principal
Midnapore City College
Kuturiya, Bhadutala, Medinipur
Paschim Medinipur – 721 129

Nabanna, West Bengal Secretariat, Howrah - 711 102
West Bengal, India

Tel : +91-33-22145555, +91-33-22143101
Fax : +91-33-22144046, +91-33-22143528

ড. পার্থ চ্যাটার্জী
ভারপ্রাপ্ত মন্ত্রী
উচ্চশিক্ষা, বিজ্ঞান ও প্রযুক্তি এবং
জৈব প্রযুক্তি বিভাগ, বিদ্যালয় শিক্ষা বিভাগ,
পরিষদীয় বিভাগ
পশ্চিমবঙ্গ সরকার
বিকাশ ভবন, সল্টলেক, কলকাতা - ৭০০ ০৯১
দূরভাষ : ২৩৩৪ ৬১৮১/২২৫৬, ২৩৩৭ ৬১৭২
ফ্যাক্স : ২৩৩৭ ৬৭৮৩/২৩৫৮ ৮৮৫৮



Dr. PARTHA CHATTERJEE
Minister-in-charge
Departments of Higher Education, Science &
Technology and Biotechnology, School Education,
Parliamentary Affairs
GOVERNMENT OF WEST BENGAL
Bikash Bhavan, Salt Lake, Kolkata - 700 091
Tele : 2334 6181/2256, 2337 6172
Fax : 2337 6783/2358 8858

No. – 103/MIC/HED, S&T, BT, SED&PA/WB/18-19

Message

I am delighted to know that *Midnapore City College* is going to organize DST-SERB sponsored two-day *National Seminar* on 5th and 6th February, 2018 at Midnapore City College, Paschim Medinipur.

I extend my felicitations and congratulations to its all members and wish the seminar a grand success.

Dr. Pradip Ghosh
Director
Midnapore City College


(Dr. Partha Chatterjee)

জগদীশ প্রসাদ মীনা, আই. এ. এস.

জেলা শাসক ও জেলা সমাহর্তা

পশ্চিম মেদিনীপুর

পোস্ট- মেদিনীপুর-৭২১১০১

পশ্চিমবঙ্গ



JAGDISH PRASAD MEENA, I. A. S.

District Magistrate & Collector

Paschim Medinipur

P.O.-Midnapore -721101, West Bengal

Off. : (03222) 275571

Resi. : (03222) 275570

Fax : (03222) 275427

E-mail : drmpmid@gmail.com

Date 31.01.2018

D.O. No. 23 -C

It is pleasure to note that members of Managing Committee of Midnapore City College are going to organize a DST-SERB sponsored two day national seminar on 'Role of Basic Sciences in translational Research applied on Biological Sciences and Human Health' scheduled to be held from 5th to 6th February, 2018. Organisation of such seminar is very important in the field of higher education and it is expected that the student as well as researchers of medical sciences will be benefitted to a large extent through this seminar.

I convey my best wishes & felicitations to all the members associated with the programme and wish the same to be a grand success.

(Jagdish Prasad Meena)

Director,
Midnapore City College,
Midnapore.



VIDYASAGAR UNIVERSITY

Professor Ranjan Chakrabarti
Vice-Chancellor

Date: 29.01.2018

MESSAGE

I am happy to learn that a DST-SERB sponsored Two-day National Seminar on "Role of Basic Sciences in Translational Research Applied on Biological Sciences and Human Health" is going to be organized by the Midnapore City College, Paschim Medinipur on February 5 & 6, 2018.

I commend this collective endeavour which reflects the positive role played by the institution through various activities carried out during the entire academic session. I commend the endeavour of the organizers and hope that the deliberations in the Seminar will really be enriching to all the participants.

I convey my best wishes for the success of the programme.


(Professor Ranjan Chakrabarti)

Dr. Pradip Ghosh,
Director,
Midnapore City College,
Bhadutala,
Paschim Medinipur – 721 129

Midnapore 721102 West Bengal India
Tel: (03222) 275329 (Office) / 263202 (Res.)
Fax: (91) 03222-275329
E-mail: ranjan.jadavpur@gmail.com
vc@mail.vidyasagar.ac.in

Organising Committee

Chief Patron	:	Dr. Pravas Ghosh Chairman
Patron	:	Dr. Pradip Ghosh Founder Director
Convenor	:	Suchismita Roy Assistant Professor in Nutrition & Dietetics Dept. of Biological Science
Organizing secretary & Joint Convenor	:	Dr. Shrabani Pradhan Assistant Professor in Nutrition & Dietetics Dept. of Biological Science
Seminar Coordinator	:	Dr. Sudipta Chakrabarti Principal
Organizing Secretary (Joint)	:	Dr. Sangita Dutta Maity Assistant Professor in Zoology Dept. of Biological Science
Seminar Co-ordinator (Joint)	:	Prof. Nayan Hazra Assistant Professor in Geography Dept. of Pure & Applied Science
Convenors for Invitation	:	Prof. Jaganath Samanta Assistant Professor in Education, Dept. of Education Prof. Prasenjit Maity Assistant Professor in Geography Dept. of Pure & Applied Science
Convenors for Printing & Publication	:	Prof. Biswajit Das Assistant Professor in Zoology Dept. of Biological Science Prof. Arpita Raj Assistant Professor in English, Dept. of Humanities
Convenors for Refreshment	:	Prof. Shilpa Dinda Assistant Professor in Botany Dept. of Biological Science Mr. Suman Mallick Administrative Dept. Mr. Haru Patra Administrative Dept. Mr. Prabir Roy Administrative Dept.
Convenors for Transport & Accommodation	:	Miss Titli Panchali Technical Assistant in Nutrition Dept. of Biological Science Mr. Abhishek Das Administrative Dept. Mr. Subrata Manna Administrative Dept.

Programme Schedule

Two Day National Seminar on “Role of Basic Sciences in Translational Research applied on Biological Sciences and Human Health”

from 5th -6th February, 2018.

Technical Program with session wise details and name of session chair/co chair,

PROGRAMME

5th -6th February, 2018

Venue	— Midnapore City College, Midnapore
Date	— 5.02.2018
8-30 a.m – 10-00 a.m.	— Registration & Breakfast
10-00 a.m – 11-00 a.m.	— Inaugural Session

Inauguration (Lighting the lamp) by
Chief Guest, Patron and Chairman of Midnapore City College

Welcome Address by the Director
Dr. Pradip Ghosh

Welcome Address by the Principal
Dr. Sudipta Chakrabarti

Highlights of the Seminar (Key note Address) by
Dr. Koushik Das
Incharge, Department of Nutrition, Raja N. L. Khan Women's College

Address by the Chief Guest
Prof. Debidas Ghosh
Professor, Dept. of Biomedical Lab Science & Management, Vidyasagar University

Vote of thanks by Organizing Secretary
Dr. Shrabani Pradhan

11-00 a.m. – 12.20 p.m.	— Technical Session – I
-------------------------	-------------------------

(Translational research on biological science related to human health)

Chairperson

Prof. Debidas Ghosh

Professor, Dept. of Biomedical Lab Science & Management, Vidyasagar University

Invited Lecture – 1 (40 mins)

J Sreenivasa Rao

Scientist D & Asst. Director, Dept. of Food Chemistry,
National Institute of Nutrition, Hyderabad.

Invited Lecture – 2 (40 mins)

Dr. Arup Banerjee

Research Scientist D, Translational Health Science & Technology Institute,
Faridabad, Haryana, India.

12.20- 12.30

— **Tea Break**

12.30 p.m.- 1.10 p.m.

— Technical Session – II

(Translational research on biological science related to human health)

Chairperson

J Sreenivasa Rao

Scientist & Asst. Director, Dept. of Food Chemistry,
National Institute of Nutrition (NIN), Hyderabad.

Invited Lecture – 3 (40 mins)

Prof. Debidas Ghosh

Professor, Dept. of Biomedical Lab Science & Management, Vidyasagar University.

1.10 p.m. – 1.50 p.m.

— **Lunch**

1.50 p.m. – 2.30 p.m.

— POSTER Session for UG and PG students by different College and
University Students

2.30 p.m. – 4.30 p.m.

— Technical Session – III

(Role of Basic Sciences in Translational Research)

Chairperson

Dr. Arup Banerjee

Research Scientist D, Translational Health Science & Technology Institute,
Faridabad, Haryana, India

Invited Lecture – 4 (40 mins)

Prof Sukhen Das

Professor, Dept. of Physics, Jadavpur University

Invited Lecture – 5 (40 mins)

Prof Sandip Chattopadhyay

Assistant Professor, Dept. of Biomedical Lab Science & Management,
Vidyasagar University

Invited Lecture – 6 (40 mins)

Dr. Sandip Das

Dept. of Physiology, University of Gourbanga, Malda

4.30 p.m. – 5.30 p.m.

— Oral Presentations

Oral Presentation (15 mins each) on the seminar topic by
Teachers and Research Scholars

Chairperson

Dr. Dilip Kumar Nandi

Associate professor & HOD, Dept. of Physiology, Raja N L Khan Womens College.

Speaker-1

Dr. Sourav Sikdar

Asst Professor & HOD, Mugberia Gangadhar Mahavidyalaya

Speaker-2

Dr. Prithviraj Karak

Asst Professor, Dept. of Physiology, Bankura Christian College.

Speaker-3

Dibyendu Dutta

Research Scholar

Speaker-4

Dr. Rajkumar Maity

Assistant Professor, Dept. of Physiology Bankura Christian College

5.30 p.m. – 6.00 p.m.

— **Tea and Snaks**

6-00 p.m. - 7-30 p.m.

— Cultural Programme

7-30 P.M.

— **Dinner**

Date: 06.02.2018

8-30 a.m – 10-00 a.m. — **Breakfast**

10-00 a.m. – 11.30 a.m. — Technical Session – IV

(Area of translation concern to best practices in the community)

Welcome address by

Dr. Sudipta Chakrabarti
Principal, Midnapore City College

Chairperson

Dr. Sukhen Das
Professor, Dept. of Physics, Jadavpur University

Invited Lectures – 7 (30 mins)

Dr. Dilip Kumar Nandi
Associate Professor, Department of Physiology, Raja N. L. Khan Women's College

Invited Lectures – 8 (30 mins)

Dr. Mantu Kumar Das
Associate Professor, Dept. of Physics, Garhbeta College

Invited Lectures – 9 (30 mins)

Dr. Keshab Ch. Mondal
Dept. of Microbiology, and Vidyasagar University

11.30 a.m.- 11.40 p.m. — **Tea Break**

11.40 a.m. – 1.10 p.m. — Technical Session – V

Chairperson

Dr. Dilip Kumar Nandi
Associate Professor, Department of Physiology, Raja N. L. Khan Women's College.

Invited Lecture – 10 (30 mins)

Dr Atiskumar Chattopadhyay
Secretary, Faculty Council of Science, Jadavpur University

Invited Lecture – 11 (30 mins)

Prof. Chandradipa Ghosh
Professor, Dept. of Human Physiology with Community Health

Invited Lecture – 12 (30 mins)

Dr. Tapanendu Kamilya

Asst Professor, Dept. of Physics, Narajole Raj College

1.10 p.m. – 2.10 p.m.

— **Lunch**

2.10 p.m. – 4.30 p.m.

Oral Presentations by
Teachers and Research Scholar (20 min each)

Chairperson:

Dr. Sudipta Chakrabarti
Principal, Midnapore City College

Speaker-1

Dr. Abhinandan Rana
Asst professor, Dept. of Chemistry, Garhbeta College

Speaker-2

Hardik Kole
Research Scholar, Dept. of Physiology, Midnapore College

Speaker-3

Swapan Banerjee
AYUSH, Ranchi

All other speakers including Teachers and Research Scholar will give oral presentation in this session.

3.20 p.m. – 4.30 p.m. Valedictory session

ABOUT THE COLLEGE

The founders have an experience of fifteen years towards the promotion of different educational institutions in the district of Paschim Medinipore within the state of West Bengal. There are one AICTE approved Moulana Abul Kalam Azad University, West Bengal & West Bengal State Council of Technical & Vocational Education and Skill Development affiliated Engineering College offering M.Tech, B.Tech, Diploma, ITI and Management courses in the name and style of **Institute of Science and Technology** at Chandrakona Town, Paschim Medinipur, four NCTE recognized and the West Bengal University of Teachers' Training, Educational Planning and Administration affiliated M.Ed and B.Ed colleges in the name and style of **Bengal College of Teacher Education** at Chandrakona Town Paschim Medinipur, West Bengal, **Anindita College for Teacher Education** at Bhadutola, Paschim Medinipur, West Bengal, **Institute for Teacher Education** at Chandrakona Town, Paschim Medinipur, West Bengal and **Excellent Model College for Teacher Education** at Chotto Dabcha, Chandrakona Road, Paschim Medinipur, Satbankura, Paschim Medinipur, two NCTE recognized and West Bengal Board of Primary Education affiliated D.El.Ed colleges in the name and style of **Gopsai Avinandan Sangha PTTI** at Chandrakona Town, Paschim Medinipur, and **College for Teacher Education** at Chandrakona Town, Paschim Medinipur and one AICTE and PCI approved and Moulana Abul Kalam Azad University, West Bengal & West Bengal State Council of Technical & Vocational Education and Skill Development affiliated Pharmacy College offering B.Pharm and D.Pharm courses in the name and style of **P.G. Institute of Medical Sciences** at Chandrakona Town, Paschim Medinipur. **Midnapore City College** is the youngest one and it is the first self financing general degree college in the South Bengal region within the state of West Bengal. It was established by Moraine Human Resource Development Organization, a registered society bearing registration no S/1L/31682 on dated 02.09.2005 having its office at Aparnapalli, Satbankura, Paschim Medinipur with the sole aim to help the people to survive as per notification of Higher Education Department, Govt. of West Bengal bearing No: W.B (Part-I)/2015/SAR-458 on dated 23rd day of September, 2015 published in Kolkata Gazette and subsequent No Objection was issued to this college through its order No.197-ILC/OM-58L/ 2017 on dated 18.07.2017 based on which Vidyasagar University also extended the affiliation by its memo No:VU/R/ Circular /8EC-10/ C0383/ 2017 dated 05.09.2017 to Midnapore City College for conducting different Under Graduate and Post Graduate programmes in the faculty of arts and science from the academic session 2017-18. The college is also recognized under Section 2 (f) of UGC Act 1956 by UGC bearing file no. 8-1/2018(CPP-1/C) dated 18th January, 2018. The college is located in educationally backward and rural area in the district of Paschim Medinipur within the state of West Bengal and most of our students belong to socially and economically backward sections of society. The sole aim of **MORaine HUMAN RESOURCE DEVELOPMENT ORGANIZATION** is to serve people by imparting quality education. The institute believes that excellent teaching can produce better students and thereby helping the institute to emerge as a centre of excellence.

Message from the PRESIDENT MIDNAPORE CITY COLLEGE



She is the founder president of Moraine Human Resource Development Organisation. The idea of opening the first self-financing general degree college in south Bengal first came to her mind. The college is an epitome of her noble thoughts. "Midnapore City College is more than just a college; we are a COMMUNITY. From your first day at Midnapore City College, you will meet people who will support, inspire, and challenge you to be the best person. Because of our uniqueness, we can promise that when you will leave, you will experience tremendous growth. You will be developed into a new, more advanced and self-assured version of yourself.

At MCC, we feel proud of ourselves of our reputation for being a “caring college”. Our faculty and staff are dedicated to help students to achieve their goals. They will work with you daily to ensure a successful educational experience. Our student body is equally as welcoming and warm-hearted. They offer an environment of support, encouragement and friendship like no other.

As an accredited institution, uniquely aligned with business and industry, we also feel proud of ourselves for being a center for academic excellence. Once you begin at Great Bay, you will be exposed to a rigorous learning experience both in and out of the classroom. We will make you face challenge like never before, but the award will be a presentation of better you. Get inspired and control your destiny.

Whether you want to gain a degree to start on a career path, or just to upgrade your skills, we offer a rich learning environment, flexible schedules and high quality, affordable programs and services to help you to succeed. Most importantly, we provide you with tools to continue as well as to evolve as a person and lead a richer and more rewarding life.

Midnapore City College is uniquely capable of answering this call, of speaking to this world. As an institution of higher education, Midnapore City College is committed to the discovery and transmission of knowledge. It also seeks to integrate excellence and distinctive commitment among the students.

As a President of Midnapore City College, I am conveying the message to all of my delegates, students and all the academic personalities. I am assuring you that by this seminar the college will provide you to have the opportunity to strengthen your views on translational research. These ideas will benefit our society. The translational research is one of the most important related things to health sciences. By these discussions people can develop their knowledge in this research connected to human health.

Imagine the possibilities and start something great with us today.

Thank you. All the best.

Smt. Sukrita Ghosh
President
Midnapore City College

Message from the PATRON
MIDNAPORE CITY COLLEGE



"The transition from school to college is a very big step in life. You have put in so much hard work in your public exams, spent sleepless nights, earned a rewarding score, and with the blessings of your parent/guardian you have joined your chosen stream of education to realize your life-ambition and set the foundation for your future. To select a future for yourself from our institution means we, the teachers and management of Midnapore City College are all set for your successful career and growth.

It is your career path that you have now embarked upon, which will be a remarkable journey in itself that will prepare you for a life beyond college. We hope to make your journey with us engaging, encouraging and enlivening as ever. We will help you to grow as a thorough individual, ready to take on life as an adult. We pray and will work with you to see you become one with the society where your contribution will make a definite difference to our world. As I mentioned earlier, the learned staff and the ever accessible management is there to guide you through your path and help you nurture your dreams and fulfill them - by empowering you to realize your true potential"

This is a great occasion to show our care for the seminar. This National Seminar is an extraordinary gathering of students, researchers, scientists and professors. It is an opportunity for all of us to discuss the “Role of basic sciences in translational research applied on biological sciences and Human Health”.

Best wishes.

Mrs. Anindita Ghosh
Patron
Midnapore City College

Message from the CHAIRMAN
MIDNAPORE CITY COLLEGE



Mr. Pravas Ghosh is the founder Secretary of Gopsai Avinandan Sangha. For last fifteen years he is in the education field and is behind the establishment and expansion of 9 different Educational Institutions in the field of Engineering, Management, Teachers' Training & Pharmaceutical Science Colleges. He is active and his vision is to develop modern Educational Institution with Teacher Education, Engineering and technology in the field of Computer Science, Electronics and Communication, Electrical, Information Technology, Management Studies, Biological Sciences, Health Sciences and Paramedical Sciences, Research Center with job oriented courses for students coming from various parts of India and abroad. He proposes to add a few more courses to the existing ones.

In a world that is ruled by technology, every aspect of life is determined by the innovation, up gradation and application of technology that is relevant and manageable. The development and use of technology is again rested on the individuals who are exposed to such technology, have firsthand experience in handling it. I extremely realize the deficiency of General Degree College in this area. I find the "Midnapore City College" with the sole aim to serve the people for such kind of education."

As a Chairman of this College, I assure you that the college will provide and assist you to achieve your goal. In Midnapore City College (MCC) you will have a quality of life that's very high and different in academic pursuits for seeking professional excellence that will enrich you and make you efficient, confident and successful. It will be more glorified by this seminar.

It is my anticipation that the Seminar will stimulate new thoughts. We will all be benefitted by the healthy exchange of ideas from this seminar. I am confident that we are going to gather a lot of knowledge from it. And I hope that these discussions will strengthen our society with the development of knowledge by translational research to human health.

Wish you all the best. Again thank you.

Mr. Pravas Ghosh
Chairman
Midnapore City College

**Message from the DIRECTOR
MIDNAPORE CITY COLLEGE**



"He is the Founder Director of MCC & Secretary of Moraine Human Resource Development Organization. He is a young and dynamic person. His vision is to develop a model Institution of Applied Science, Humanities, Social Science and Education, and Research Centre with job oriented courses for the students coming from different parts of India and abroad. In the competitive world of today, survival is not just a matter of qualifications but one of credentials with competence. A better survivor is one with better competency and qualifications. One has to struggle with one's ability, skill, qualification and competency. There are so many institutions in our country. All of them strive to add some important value in an individual's life. The

"Midnapore City College (MCC)" has been initiated with the vision of enabling the youth of this country to have a purposeful vision, mission and goal. I always think of the betterment of the Institution and to shape the Institute as a Center of Excellence for higher studies and researches in science, Humanities, Social Science and Education, particularly in emerging areas."

As the Founder Director of Midnapore City College & Secretary of Moraine Human Resource Development Organization I am welcoming you to this seminar. I wish to develop Midnapore City College as a model Institution with the development of Applied Science, Humanities, Social Science and Education in this college. With this developmental and progressive thought in mind we have arranged one national seminar related to translational research for the benefit of human health. Mainly from that point of view, the college has arranged this discussion hub by this two day seminar.

Our present discussion is on “Role of Basic Sciences in Translation Research applied on Biological Sciences and Human Health”. It is directly applied to the society. The conference is relevant to any person working in science related to health research. The conference is also related to the researchers doing scientific studies involved in policy and strategic perspectives in Basic Science in Translational Medical Research and Technology. Basic science is the foundation of medical advancement. Investigators with a deep understanding of fundamental biology and the mechanisms of disease are essential for translating laboratory discoveries into new and improved health interventions, diagnostics, and treatments.

Thank you. I wish all the very best.

Dr. Pradip Ghosh
Director
Midnapore City College

Message from the PRINCIPAL
MIDNAPORE CITY COLLEGE



Good morning and welcome to the inaugural National Seminar of Midnapore City College. The college has been functioning with a noble vision and mission clearly reflecting its social responsibility and commitment to nation building. The institution provides effective and efficient support and facilities to academic mission and maintains a supportive environment for all students and staff by this symposium held in the rural area of Midnapore (Junglemahal).

This is a marvelous opportunity for me to show my support for this seminar. This national Seminar is an unprecedented gathering of students, researchers and scientists. It is a chance for us to discuss the “Role of basic sciences in translational research applied on biological sciences and Human Health”. The seminar aims to bring together leading academic personalities including students and research scholars to exchange and share their experiences and researches about the scientific research work done in different disciplines related to health science. It also provides the premier interdisciplinary forum for researchers and educators to present and discuss the most recent innovations and trends in translational research and practical challenges and the solutions adopted in the field of Biological sciences especially in health science.

It is my hope that the Seminar's panels will stimulate a thoughtful dialogue. We will all be benefitted with the healthy exchange of ideas. I hope these discussions will reinforce our strong commitment.

Thank you. Best wishes.

Dr. Sudipta Chakrabarti
Principal
Midnapore City College

Message from Organizing Secretary



She is Assistant Professor of Nutrition, Department of Biological Sciences, Midnapore City College, obtained her Doctorate degree in Science from Jadavpur University. She is young and dynamic lady with enthusiastic and dedicated to her job, also play active role towards strengthening the development of Midnapore City College.

At first I convey my deep sense of reverence and gratitude to all of you for your lustrous presence and participation in the DST-SERB sponsored Two Day National Seminar on 5th and 6th February, 2018 entitled “Role of basic sciences in translational research related to biological sciences and human health”. We have been fortunate to have some of the eminent persons from different Research Institution and higher education Institutes working in the area basic science and biological sciences. I am sure that the participants must have benefitted by attending this National level seminar. I am very much thankful to all the sponsors of this seminar, without their generous financial support, it would not have been possible to organize this seminar. I am very much thankful to Dr. Pradip Ghosh, Founder Director of Midnapore City College for continuous support and advices which have greatly helped towards the successful organization of this Seminar. My special thanks to Dr. Sudipta Chakraborti, Principal, Midnapore City College for his immense support and co-operation. I sincerely thanks to all the members of the advisory committee for their valuable suggestions. I am also thankful to Prof. Pravas Ghosh, Founder Chairman of Midnapore City College for his encouragement, guidance & providing a stimulating environment for such educational developments. I thank all plenary speakers and the delegates for their enthusiastic participation in this seminar. I acknowledge the unwavering support received from all the faculty and staff members of Midnapore City College. My thanks also go to all the people who have given their precious time in organizing this seminar. In particular, I would like to acknowledge and thanks Dr. Dilip Kumar Nandi, Associate Professor & HOD, Dept. of Physiology, Raja N. L. Khan Women's College and Dr. Koushik Das, In-charge, Dept. of Nutrition, Raja N. L. Khan Women's College for their constant encouragement and guidance for organizing this seminar. I am extremely grateful to Science and Engineering Research Board (SERB), Department of Science & Technology, Government of India for their financial support for organizing this seminar.

Dr. Shrabani Pradhan

Organizing Secretary and Assistant Professor in Nutrition,
Department of Biological Sciences, Midnapore City College

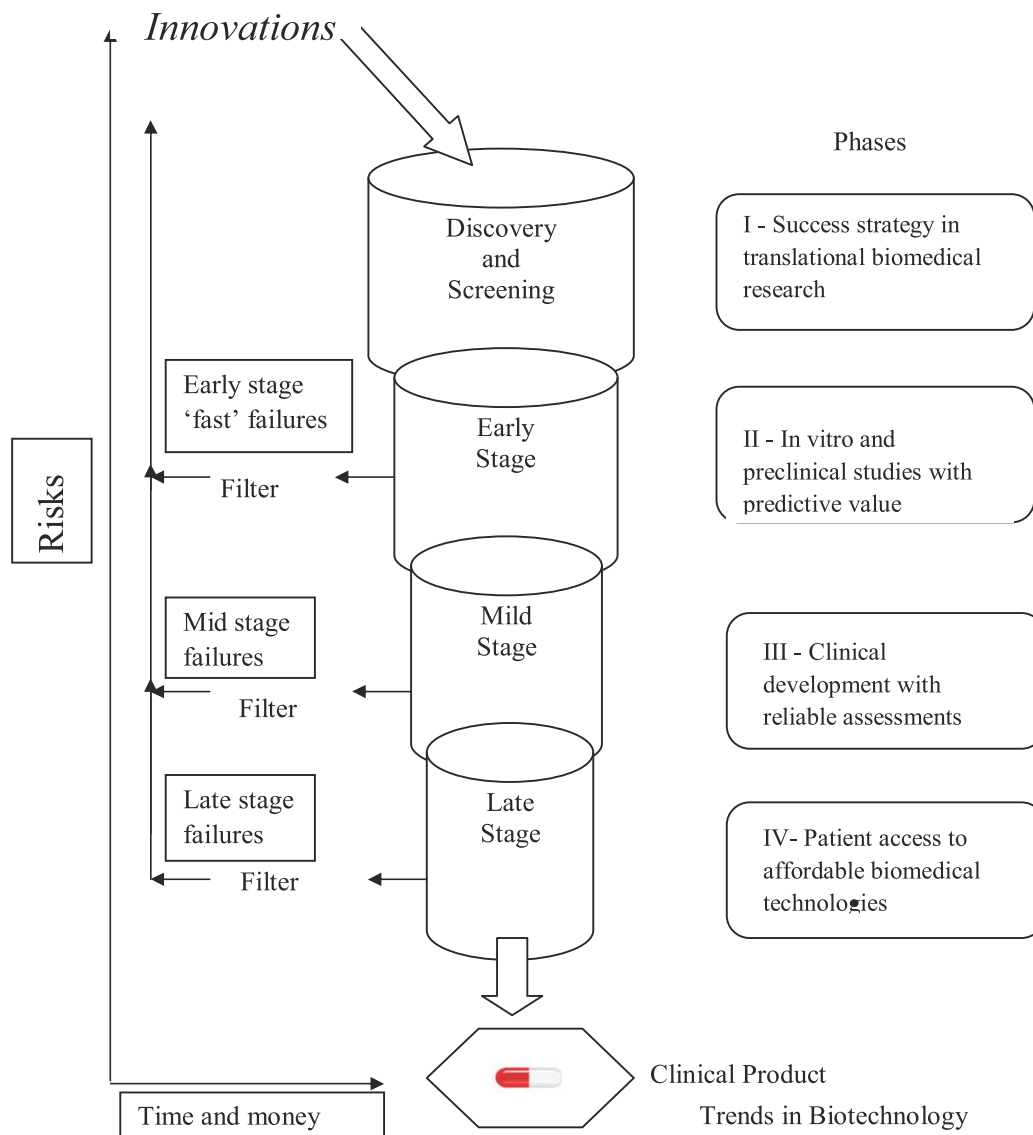
Key note address for Two Days National Seminar on “Role of Basic Sciences in Translational Research applied on Biological Sciences and Human Health

Dr. Koushik Das, In-charge, Department of Nutrition, Raja Narendralal Khan Women's College, Midnapore-721102, Dist-Paschim Medinipur, West Bengal

A Write Up



Translational research implements a "bench-to-bedside", from laboratory experiments through clinical trials to point-of-care patient applications, model, harnessing knowledge from basic sciences to produce new drugs, devices, and treatment options for patients. The end point of translational research is the production of a promising new treatment that can be used with practical applications, that can then be used clinically or are able to be commercialized.



Conclusion: Translational research includes two areas of translation. One is the process of applying discoveries generated during research in the laboratory, and in preclinical studies, to the development of trials and studies in humans. The second area of translation concerns research aimed at enhancing the adoption of best practices in the community. Cost-effectiveness of prevention and treatment strategies is also an important part of translational science.

Key words: *Translational research; Bench-to-bedside; Harnessing knowledge; Commercialized*

Micronutrient deficiencies: To eradicate using green leafy vegetables, vegetable and fruits consumption

Sreenivasa Rao Jarapala

Food Chemistry Division, National Institute of Nutrition, ICMR

Jamai Osmania-P.O, Hyderabad.

Email: sreenu.nin@gmail.com



Back ground: The World Food Summit in 1996 provided a wide-ranging definition for food security which brings into focus the connection between food, nutrition and health. The world is faced with the tackle to feed an estimated 9 billion population of the Earth by 2050. Research relevant for developing countries included the potential molecular targets to alleviate accumulation of toxicants in rice and other food and vegetable crops. As in further areas of research and life, human factor seems to be the most significant one for the safety of food. The five keys to safer food of the World Health Organization (WHO) – keep clean, separate raw and cooked, cook thoroughly, keep food at safe temperatures, use safe water and raw materials – are thus still very pertinent for the developed as much as the developing world. According to the WHO, food borne and waterborne diarrheal diseases kill an estimated 2.2 million people annually, 1.9 million of them children. Unsafe food can be the cause of or contribute to many diseases, from diarrhea to some cancers, so that food safety, nutrition and food security are among WHO's 13 strategic objectives. Among the disorders, micronutrient deficiencies (MNDs) are of great public health and socioeconomic importance worldwide. They affect low-income countries but are also a significant factor in health problems in industrialized societies with impacts among wide vulnerable groups in the population, including women, children, the middle aged and the elderly. By consuming a healthy diet, many of the health problems can be avoided. The diet is largely determined by the perceived palatability of foods. Globally majority of people are consuming consistently less than the daily recommended allowance requirement of the nutrient components. Even in developed countries like Australia, Canada, Europe, UK and USA researchers concluded that there is large gap between actual and recommended consumption of both green leafy vegetables (GLV) and fruits despite decades of concern and publicity. This gap is much more in developing countries. The principal nutritional problems in developing countries include protein-energy malnutrition (PEM), iodine deficiency, vitamin A deficiency (VAD) and iron deficiency anemia (IDA). A growing number of countries are confronted with new health risks linked to diet, namely cardiovascular diseases (CVD), diabetes, obesity and cancer. Though GLV and vegetables are considered rich amount of micronutrients and playing an important role to prevent the nutritional disorders, the extensive literature explored that there is a gap of knowledge in the appropriate consumption of GLV and its benefits to human. Further the Indian culinary practices that involve factors such as temperature, light and alteration in moisture are playing major role in terms of nutrient retention in GLV

and other foods. Our study confirmed that the processing methods are playing indispensable role in stability and retention studies. These studies offer harmonizing consequences for food researchers, nutritionists and health and dietetic practitioners to formulate precious strategies to fight against micronutrient deficiencies. Furthermore the development of methods for the isolation of pure compounds to be used as standards for analytical purposes and for bioavailability studies is urgently required. Further efforts should make to widen the knowledge in this unmapped area of research. More investigations are needed to provide a better understanding of the oxidative phenomena of carotenoids and micronutrients during cooking since different vegetables have different chemical and physical characteristics. A comprehensive food policy includes food security and distribution with special emphasis on the elderly and low-income populations is essential at this juncture. Little bit success has been achieved in preventing and controlling iodine deficiency, and palpable progress has been made in the past 20 years in correcting vitamin A deficiency and promoting breastfeeding; however, for iron, articulated goals have not been translated into programs, and the problem has remained the same or worsened. In addition, operational research is needed to develop, implement, and evaluate programs to improve micronutrient status. Never has so much evidence been amassed on the consequences of a deficiency disorder without programmatic application. The challenge now is to develop and implement programs for preventing and treating micronutrient deficiencies and to evaluate their effectiveness for child growth, health, and survival.

Understanding Dengue pathogenesis: Recent discovery and translational research

Dr Arup Banerjee

Research Scientist D, Translational Health Science & Technology Institute
Faridabad, Haryana

Abstract



Dengue fever (DF) is one of the most rapidly spreading mosquito-borne diseases in tropical and subtropical regions. Over last 50 years up to 30-fold increase of dengue fever incidence has been reported. About 2.5 billion people live at high risk of dengue fever in over 100 endemic countries. More than 50 million infections occur every year with 22,000 deaths mainly among children. In India, dengue fever is widely prevalent, and all the four serotypes of dengue virus (DENV 1-4) are involved with varying degrees of disease severity. The disease is reported from 18 states and union territories since the year 1996, with ~450 million populations at risk. The DENV infection usually causes dengue fever with flu-like illness affecting infants, young children, and adults. The DF occasionally evolves into a potentially lethal complication called severe dengue (DS) leading to a rapid fall in platelet count along with plasma leakage, fluid accumulation, respiratory distress, and severe bleeding. Without specific antivirals, the case management of high-risk dengue patients entirely relies on supportive care, involving constant monitoring and timely fluid support to prevent hypovolemic shock. The ability to predict which patient may develop severity may improve the triage and treatment. With the recent discovery of high throughput RNA sequencing allows us to understand the disease progression at the genomic level. During the presentation will collate the latest advancement in dengue research and discuss some of our results for better insights in dengue pathogenesis.

Stress Induced Health Hazards: Black Tea Based Nutraceuticals as Bio-Scissor

Debidas Ghosh, Adrija Tripathy, Baisakhi Biswas, Barnali Das and Prabal Ghosh

Nutrigenomic Research Laboratory,

Department of Bio-Medical Laboratory Science & Management with Clinical Nutrition, Vidyasagar
University



Stress is a common situation in present day world where most of the community members are suffering from different types of stresses like biological, physical, chemical, emotional etc. Get age based lifestyle and altered food style are another causes of stress imposition. The conditions of the body by external or internal factors that deviates our homeostasis referred as stress. One of such stress is oxidative stress where reactive oxygen species (ROS) generation is increased. Such ROS are superoxide anion (O_2^-), singlet oxygen (O), hydroxyl radical (OH^\cdot) etc. ROS induced free radicals like H_2O_2 radical, OH radical, hydroperoxyl radical etc are more deleterious for developing health hazards by denaturing DNA, enzymes, proteins etc. ROS induced health hazards results early aging, cancer, infertility, diabetes, atherosclerosis etc. Though, there are several bio-molecules present in our body to encounter free radicals which are vitamin A, E, C and anti-oxidant enzymes like catalase, peroxidase, glutathione-s-transferase etc but these endogenous anti-oxidants are unable to neutralize the harmful effects of stress induced free radicals and as a result the deleterious effects are noted. That results low level of mental concentration, creativity, efficiency, mental relaxation, productivity, spontaneity etc. Present research in biological sciences can able to identify some bio-molecules having nutritive and pharmacological actions known as nutraceuticals. Black tea which is 2nd beverage throughout the world has high level of nutraceuticals like catechin, gallic acid, epigallocatechin gallate etc. These nutraceuticals handled the ROS and free radicals by direct and indirect ways. Nutraceuticals can able to scavenge the free radicals by capturing these. Side by side, nutraceuticals can able to switch on the genes of said anti-oxidant enzymes for their expression through ARE (Anti-oxidant Response Element) of the catalase, superoxide dismutase gene which has been proved by real time PCR study. Beside the nutraceutical, there are some golden rules to manage the ROS induced damage which are

1. Think the stressful situation in positive way or in casual way not in negative way.
2. In stressful situation, walk gently within room or sitting station but never remain static posture.
3. Intake of first class protein in diet
4. Morning exercise/ yoga in regular basis.
5. Gossiping with friends.

6. Man made negative environment/stressful environment should be transformed in positive direction.

To get the maximum level of functional nutraceutical from black tea following steps should be followed:

1. 3 to 4 cups of tea (50 ml/ cup) at morning, 10 AM, 3-4 P.M., 8-9 P.M.
2. Tea leaves should be placed in after boiling the water but not in boiled water (at 90-95° C). Boiling of tea leaves should be prohibited.
3. Tea extract should not be mixed with milk.
4. Tea bag should not be used for tea preparation.

Oxidative Stress Modulation by Natural Therapy in Liver Disorders

**Soumendra Darbar^{1,2}, Srimoyee Saha³, Kausikisankar Pramanik²
and Atiskumar Chattopadhyay^{*1}**

¹Faculty of Science, Jadavpur University, Raja S C Mallick Road,
Kolkata-700032, India

²Department of Chemistry, Jadavpur University, Raja S C Mallick Road,
Kolkata-700032, India

³Department of Physics, Jadavpur University, Raja S C Mallick Road,
Kolkata-700032, India

Abstract



The rising number of patients with liver dysfunction due to overwhelming usage of drugs and alcohol has paved the path for researchers to be interested in herbal medicine. This is because there are only a few universally effective and available options for the treatment of common liver diseases, such as cirrhosis, fatty liver and chronic hepatitis. Herbal treatment has been used to alleviate disorders related to liver and other internal organs for many centuries in different parts of the world, and have currently become a favorable therapy internationally for pathological liver conditions. In recent years, the usage of herbal drugs for the treatment of liver diseases has increased all over the world. The herbal drugs are believed to be safe and free from serious adverse reactions, as they are obtained from nature. Also, the limited therapeutic success of modern medicine has steered the increase in the usage of alternative medicine including herbal preparations.

Oxidative stress has been considered as a conjoint pathological mechanism, and it contributes to initiation and progression of liver injury. Natural antioxidants contained in edible or medicinal plants often possess strong antioxidant and free radical scavenging abilities as well as anti-inflammatory action, which are also supposed to be the basis of other bioactivities and health benefits. Oxidative stress plays an important role in drug metabolism. Most of the drugs administered to patients are lipophilic in nature and can enter into the cell easily through plasma membrane. To reach the target site for proper adsorption, distribution, and excretion, these drugs must be converted to hydrophilic molecules. The conversion of these nonpolar compounds into polar compounds is termed as drug metabolism. Drug and other xenobiotic metabolism occur through three phases, namely, phase I, phase II and phase III. The major enzyme that play a pivotal role in phase I is Cytochrome P450s (CYP families). Phase II of drug metabolism mainly involves glucuronidation catalyzed by UDP glucuronosyltransferase (UGT). In this process, glucuronic acid binds to a substrate having suitable functional group via covalent linkage. Phase III involves the participation of various transporters involved in drug metabolism. Since ROS is produced mainly in phase I of drug metabolism, so phase III is not that much important in this context.

We developed a Herbal Formulation (HF) which is very effective for liver disorder such as drug induce liver toxicity, liver fibrosis, nonalcoholic fatty liver disease and Steatohepatitis. The inhibition of lipid peroxidation and enhancement in the activity of antioxidant enzymes by HF-LIV-01 may be due to the direct

free radical scavenging activity and reactivation of these enzymes in the liver. Thus the antioxidant potential and inhibitory effect of HF-LIV-01 on lipid peroxidation may play an important role for liver protection. Moreover, the active phyto-ingredients present in HF-LIV-01 stabilize the plasma membrane of hepatocytes and help to maintain the transport through it. The formulation also facilitates the repair of hepatic tissue by protecting serum marker enzyme activities.

Synthesis, characterization and application of various metal and metal oxide nanomaterials

Dr. Sukhen Das

Department of Physics, Jadavpur University

Abstract



Recent developments in the field of nanotechnology and nanoscience have introduced potentially significant, metal and metal oxide nano-materials having promising applications in different sectors. Metal derived nanocrystals possess unique physicochemical properties due to their nano-sized dimension and composition, which actually enhance their surface to volume ratio. Self-assembly of these nanostructured building blocks has also attracted significant interest in material synthesis and device fabrication. Characterization of the synthesized nanomaterials is another important research topic. Different characterization tools such as, X-Ray diffraction, Electron microscopy, Thermal analysis, Spectrophotometry and Electrical measurements can be employed for investigation of crystal structure, purity and other important properties of the nanoparticles. While characterization of nanomaterials provide us the analytical details, application of these nanoparticles in different sectors such as, electronics, pharmaceuticals, catalysis, energy storage and medical science makes these metal and metal derived nanomaterials as a potential candidate for future industrial application.

Keywords: *Metal oxide nanoparticles; Characterization; XRD; Electron microscopy; Nanoparticle application.*

Translational physiology: from molecules to public health (laboratory to land)

Dilip K. Nandi, Ph.D.

(dilipnandi2004@yahoo.co.in)

Department of Physiology Raja N.L. Khan Women's College.

Abstract



The term 'translational research' was coined 20 years ago and has become a guiding influence in biomedical research. It refers to a process by which the findings of basic research are extended to the clinical research setting (bench to bedside) and then to clinical practice and eventually health policy (bedside to community). It is a dynamic, multidisciplinary research approach. The concept of translational physiology applies the translational research model to the physiological sciences. It differs from the traditional areas of integrative and clinical physiology by its broad investigative scope of basic research to community health. Translational physiology offers exciting opportunities, but presently is under-developed and -utilized. A key challenge will be to expand physiological research by extending investigations to communities of patients and healthy (or at risk) individuals. This will allow bidirectional physiological investigation throughout the translational continuum: basic research observations can be studied up to the population level, and mechanisms can be assessed by 'reverse translation' in clinical research settings and preclinical models based on initial observations made in populations. Examples of translational physiology questions, experimental approaches, roadblocks and strategies for promotion are discussed. Translational physiology provides a novel framework for physiology programs and an investigational platform for physiologists to study function from molecular events to public health. It holds promise for enhancing the completeness and societal impact of our work, while further solidifying the critical role of physiology in the biomedical research enterprise.

The term “translational research” is often used without much thought about what it means. The American Physiological Society (APS) has defined translational research as “the transfer of knowledge gained from basic research to new and improved methods of preventing, diagnosing, or treating disease, as well as the transfer of clinical insights into hypotheses that can be tested and validated in the basic research laboratory.” This definition implies that the process is bidirectional, from the bench to the bedside, as well as from the bedside back to the bench. Observations made in basic sciences can translate into improved patient care, and clinical and population studies can stimulate new ideas and new research approaches in basic science laboratories.

Until the 1980s, basic research and clinical studies were done side by side in most academic medical centers. However, this no longer appears to be the case. Two-track systems, with a research track and a clinical track, are now the rule rather than the exception in academic medical centers. Part of this split can be attributed to the introduction of managed care, which was intended to produce efficient, cost-effective medical practitioners. However, one of the unfortunate consequences of this approach has been the loss of the clinical researcher.

This, in turn, has resulted in an almost complete absence of clinical physiology, an important link in the translational research chain.

Also contributing to the widening gap between basic research and clinical medicine has been the gradual demise of integrative physiologists working at the whole animal level who can effectively interact with molecular biologists and clinical researchers. Traditionally, the discipline of physiology has served as the bridge between the basic sciences, such as biochemistry, and clinical research. However, the technological advances in molecular biology and genomics, and the funding pressures that have pushed research in these directions, have led many of us to become very reductionist in our research, to the extent that physiologists are becoming indistinguishable from other basic scientists. In some ways, this is beneficial to the discipline of physiology. Some of the most interesting physiology takes place at the boundaries of our discipline and results from combining knowledge of various fields, such as biochemistry, genetics, engineering, pharmacology, and bioinformatics. At the same time, however, there are fewer physiologists conducting studies at the whole animal level, an area of research that is critical to the strength of the translational research chain.

Renal disorder is one of the most common kidney problems and occurs when body is exposed to a drug or toxin. Kidney disease was ranked the ninth leading cause of death in the world 2001. 39,480 people died from nephritis, nephrotic syndrome each year. When kidney damage occurs, body is unable to excrete excess urine and wastes. As a result, electrolytes become elevated than normal level into the blood. Uremia means excess nitrogenous waste products in the blood and their toxic effects. Effective treatments for renal failure and elucidation of uremia have traditionally been dialysis or kidney transplant which are very expensive, time consuming, complicated technique and not free from side effects. There is a great urgency for an unconventional, affordable therapy for patients who cannot afford expensive dialysis or kidney transplant to keep them alive.

Dialysis and kidney transplantation are not fully curable treatment for kidney failure patients. Natural products can provide unlimited opportunities for new drug discoveries because of their unmatched chemical diversity. Different research studies in our laboratory suggest that renal disorder can be treated by natural plant products such as *Terminalia arjuna*, *Asparagus racemosus*, Tea extracts as these plants contain beneficial phytochemicals and probiotics for alternative harmless of their protectiveness. The study has also been done in our lab to clarify the physiological and microbial change in the intestinal microbiota at hypobaric condition and evaluate the improvement of gut microflora including the health condition of rats by probiotic treatment. These research studies are also conducted in our laboratory for the liver disorder also and these drug delivery has a fruitful result for the treatment due its effectiveness as well as less expensive.

G1P[8] Rotavirus and *Escherichia coli* - mediated Prevalence of Diarrhea in Paschim Medinipur District, West Bengal, India

Chandradipa Ghosh

Department of Human Physiology & Community Health, Vidyasagar University,
Midnapore, West Bengal, India.

E-mail : ch_ghosh@mail.vidyasagar.ac.in

Abstract



Acute diarrheal disorder is a leading cause of global morbidity and mortality of children under 5 years of age. The etiological agents of acute diarrhea involve a broad range of causative agents including rotavirus and enteropathogenic *Escherichia coli*. The present study was undertaken with a goal to identify the prevalent genotype of circulating rotavirus strains and different enteropathogenic bacteria among children (< 5 years) admitted with acute gastroenteritis at rural hospital setting of Paschim Medinipur District, West Bengal, India.. In this surveillance study, we obtained 453 fecal specimens within the period from September 2013 to August 2014. We have found G1[P8] as highest prevalent (67%) genotype of rotavirus followed by G3[P8] (9%). Furthermore, Group A rotavirus (61.81%) was found as the primary causative agent of childhood diarrhea and diarrheagenic *Escherichia coli* (33.33%) as the second causative agent. A significant number of mixed infection cases (34.21%) were found including rotavirus-bacteria as single dominating type ($p < 0.05$) comprising of 83.22% among all mixed infections. The antibiotic susceptibility study reveals the prevalence of multi-drug resistant enteropathogens with resistance against Ceftriaxone ($p \leq 0.0001$) and Ampicillin ($p \leq 0.0063$) in most of the studied enteropathogenic bacteria.

Keywords: Diarrhea, surveillance, Rotavirus, G[P] typing, *Escherichia coli*

Traditional fermented foods: the glory of ancient past and remedy for future

Keshab Chandra Mondal

Department of Microbiology, Vidyasagar University, Midnapore [mondalkc@gmail.com]

Abstract



Traditional fermented food preparation is one of the oldest biotechnological processes probably originated from the ancient Indian civilization. In this food processing, microorganisms play a crucial role in improvement of sensory characteristics, bioenrichment, health promoting attributes, and preservation of foods. Fermentation helps to reduce non-digestible carbohydrates, enriches the pool of essential amino acids, vitamins, and minerals, and increases the overall quality, digestibility, taste, and aroma of the food. This extraordinary benefit of fermented food is helpful to maintain the healthy composition of intestinal microbiota that are essential for protection from various diseases and to maintain physiological homeostasis and the gut-brain relationship of the host. From this point of view, fermented food is designated as “naturally fortified functional food”. The market of fermented foods is expanding in world-wide with huge rate as these are considered as healthy foods, functional foods, therapeutic foods, nutraceutical based foods or bio-foods. Currently, > 5,000 different fermented foods are consumed by mankind worldwide, mostly prepared from available vegetable, cereals and animal products. In India, milk and cereal based fermented products are most popular.

Presently we are examining many popular fermented foods of our country. Extensive scientific focusses have been given to understand their composition, quality and health benefits to verify their age-old claims. In this seminar, a most successful story of a popular traditional food will be discussed during the presentation.

A Cheap and Fast Protocol for Extracting Genomic DNA from Fresh and Frozen Human Blood Samples.

Pokhraj Guha^{1,2&#}, Avishek Das¹, Somit Dutta¹ and Tapas Kumar Chaudhuri¹.

¹Cellular Immunology Laboratory, Department of Zoology, University of North Bengal,
Raja Rammohunpur, Siliguri, West Bengal, India, 734013.

²Department of Zoology, Garhbeta College, P.O. Garhbeta.
Dist. Paschim Medinipur. PIN-721127.

[#]Corresponding author:

Pokhraj Guha Assistant Professor Department of Zoology, Garhbeta College,
P.O. Garhbeta. Dist. Paschim Medinipur. PIN-721127.
Email: pokhraj.pg@gmail.com

Abstract

Background: Many published methodologies are available for extraction of human genomic DNA. Most of these methods suffer from one or more drawbacks including low yield, poor quality, high cost, more time consumption, use of toxic organic solvents and many more. Besides, some of these techniques require expert hands for getting better results. Herein, we have aimed to develop a method to extract DNA from 500µl of fresh or frozen human blood.

Objectives: To develop a rapid method of DNA extraction for pursuing basic molecular researches.

Methods: 500microliter (µl) of fresh and frozen human blood samples were used for standardization of the extraction procedure. Absorbance at 260nm and 280nm respectively (A_{260}/A_{280}) were estimated spectrophotometrically to check the quality and quantity of the extracted DNA samples. Qualitative assessment of the extracted DNA was checked by Polymerase Chain reaction and enzymatic digestion of the DNA sample.

Results: Our protocol resulted in average yield of $22\pm 2.97\mu\text{g}$ and $20.5\pm 3.97\mu\text{g}$ from 500µl of fresh and frozen blood respectively, which were comparable to many reference protocols and kits.

Conclusion: Our protocol is rapid, economical and avoids the use of toxic organic solvents. In addition, the quality and quantity of DNA obtained from the above protocol is suitable for downstream applications. The protocol may also be useful for pursuing basic molecular researches in laboratories having limited funds.

Keywords: *DNA extraction; Human; High Yield; Cost effective; Fresh blood; Frozen blood.*

Molecular mechanism of lung cancer by benzo[a] pyrene intoxication: a review

Sourav Sikdar* and Raju Majumder

Department of Zoology, Mugberia Gangadhar Mahavidyalaya *Mob. No.- 9836009050

Abstract

Background: Cigarette smoking is complex mixture of chemicals including multiple genotoxic lung carcinogens. Benzo[a] pyrene [B(a)P] is among the principal constituents of tobacco smoking that cause lung carcinogenesis. Non-small cell lung cancer (NSCLC) is the major one troubling mainly tobacco smokers. DNA hypermethylation, an important aspect involved in B(a)P-induced lung cancer progression affects CpG-island of DNA and causes inactivation of tumour suppressor genes.

Objectives: In this study, the molecular consequence of B[a]P on proliferative activity of lung adenocarcinoma cells has been reviewed. Involvement of genes in BaP-intoxicated lung cancer and DNA methylation status have also examined.

Methods: Gene ontological analysis of Akt, ERK, EGFR, Tubb5, Fos, Cdh1, Cyp1a1, Apc, Myc, Ctnnb1, Trp53, Stat3 and Cav genes have been studied in B(a)P-induced rats. DNA methylation status has been dogged in lung cancer-specific tumour suppressor genes (p15 and p53) in BaP-intoxicated rats.

Results: Microarray analysis revealed reversible upregulation of EGFR and epiregulin in B(a)P-treated cells, in which overexpression of phosphorylated EGFR protein was recognized. B(a)P treatment increased mRNA expressions of amphiregulin and epiregulin ligands. Ontological genes showed significant expression differences in BaP-induced lung cancer of rats. Aberrant methylation was found at CpG islands of p15 and p53 genes in B(a)P-treated cells presumably due to loss of function of p15 and p53.

Conclusion: This review analysis discusses certain features of mechanism and role of differential genes in relation to BaP- intoxication structurally characterized DNA adducts in lungs of smokers. Hyper-methylation status was indicative of inhibition of tumour suppressor genes in B(a)P- induced lung cancer.

Keywords: *Benzo[a]pyrene; Lung cancer; Methylation, Genes; Molecular mechanism*

Antimicrobial Activity of Nanoconjugated Vancomycin Against Drug Resistant *Staphylococcus Aureus*

Dr. Subhankari Prasad Chakraborty

Department of Physiology, Ramananda College, Bishnupur, Bankura-722 122,
West Bengal, INDIA.

E-mail: subhankariprasad@hotmail.com

Abstract

Background: *Staphylococcus aureus* is a most common pathogen in hospital and community acquired disease. Vancomycin-resistant *S. aureus* was first appeared in the USA in 2002. Treatment of VRSA is a serious problem in medical practices. Folic acid tagged Chitosan nanoparticles are used as Trojan horse to deliver drug into bacterial cells.

Objectives: The present study was aimed to evaluate the antimicrobial activity of nanoconjugated vancomycin against drug resistant *Staphylococcus aureus*.

Methods: Drug resistant *Staphylococcus aureus* were isolated from clinical samples. The bacteria were identified and confirmed by traditional and conventional biochemical methods. Antimicrobial study was carried out by different antibiotic sensitivity tests against the pathogens by using nanoconjugated vancomycin.

Results: These nano-sized vehicles enhances the transport of vancomycin into bacterial cell across epithelial surfaces, and shows its efficient drug-action which has been understood from studies of different antibiotic sensitivity tests of nanoconjugated vancomycin. Tolerance values distinctly showed that nanoconjugated vancomycin is very effective and has strong bactericidal effect on VRSA.

Conclusions: The present study demonstrates that nanoconjugated vancomycin has effective antibacterial activity against drug resistant *Staphylococcus aureus*.

Key-words: Vancomycin resistant *Staphylococcus aureus*; nanoconjugated vancomycin; minimum inhibitory concentration; disc agar diffusion; antibiotic assay.

Nutrient Intake and Food Adequacy of the Rural School Going Children: a Cross Sectional Study at Bankura District, West Bengal

Malay Kumar Patsa^{1,2}, Pamela Banerjee¹

¹Seacom Skill University, Kendradangal, Bolpur, Birbhum, West Bengal.

²Department of Nutrition, Bankura Sammilani College, Kenduadihi, Bankura, West Bengal

Correspondence to: Dr. Pamela Banerjee, Assistant Professor, Dept. of System Biology,

Seacom Skill University, Kendradangal, Bolpur, Birbhum, West Bengal.

E-mail: pbanerjee232@gmail.com

Abstract

Background: Good nutrition during school age is vital for growth and development as well as academic performance of the children.

Objectives: This study was conducted to determine the food preferences, dietary pattern and adequacy of nutrients in the diet of rural school going children of Bankura district, West Bengal.

Methods: This community based, cross-sectional survey was carried out among 232 rural school going children (five to ten years). A semi-structured and pre-tested interview schedule was used as a tool for data collection. Twenty-four hour diet recall method was used to collect dietary data. Dietary intake of nutrients was calculated using food composition table and it is then compared with Recommended Dietary Allowances. For statistical analysis student's t test was computed. The p value of ≤ 0.05 was considered statistically significant.

Results: The result showed that the majority of children were non-vegetarian (97.41%). They followed three (24.14%) or four meal patterns (75.86%). The mean nutrient intake for energy, protein, fat, iron and calcium was significantly lower than the RDA in all the ages of children. The intake of beta-carotene, thiamine and riboflavin was significantly higher except in 7-9 years age group in which mean thiamine intake was slightly lower than the Recommended Dietary Allowances.

Conclusion: The present study indicates that the consumption of food by the rural school going children was not adequate and the intake of most of the nutrients was lower than the Recommended Dietary Allowances.

Keywords: *Nutrient intake; Food adequacy; Rural school children; Food preferences; Meal pattern.*

Diabetes Mellitus and the Herbal Plants Used for its Management: an Overview

Dr. Rajkumar Maiti

Assistant Professor, Department of Physiology, Bankura Christian College,
Bankura-722 101.

E mail- rajkumarbcc1976@gmail.com

Abstract

Over the last century human life style and food habits have drastically changed which lead to various chronic diseases. Diabetes mellitus is one such disease which is causing serious health problem. Diabetes mellitus is a metabolic disorder of multiple etiologies characterized by chronic hyperglycemia with disturbance of carbohydrate, protein and fat metabolism resulting from defects in insulin secretion or insulin action or both. Scientific reports revealed that diabetes cannot be cured completely. In addition to that rapid increase in diabetes mellitus is becoming a serious threat to mankind in all parts of the world. WHO projects that diabetes will be the 3rd leading cause of death in 2020. According to latest data the International Diabetes Federation Diabetes Atlas Eight Edition 2017 provide the latest figures estimated that 425 million people live with diabetes worldwide and this number will rise to 629 million in 2045. India is the diabetic capital of the world in the year 2030 with as many as 50 million people suffering from type-2 diabetes. Allopathic drugs have not shown any significant effect for the treatment of the disease. Hence focus has been turned towards traditional system of medicine. Medicinal plants play an important role in management of diabetes mellitus. During the past few years many bioactive drugs have been isolated from plants. These are like green tea polyphenols which regulates the expression of genes involved in glucose uptake and insulin signalling. The bitter melon is specifically used as a folk medicine for diabetes. It contains compounds like bitter glycosides, saponins, alkaloids and phenolics, Similarly *Tamarindus indica* L. (Caesalpiniaceae) seed is an indigenous medicinal plant which is used as anti-diabetic and anti-oxidative properties in rural sectors of tropical countries based on traditional medicine. It contains phenolic substances, flavonoids, alkaloids, terpenoids and steroids. All these active biomolecules that may sensitize the insulin receptor to insulin or stimulate the existing β -cells of islets of Langerhans to release insulin. *Syzygium cumini* seed extract have significant anti-diabetic activity. The isolated compound, myricetin from seed was responsible to decrease in blood sugar level. The possible action may be by potentiation of the insulin effect of plasma by increasing either the pancreatic secretion of insulin from β -cells of the islets of Langerhans or its release from the bound form. Bark showed the presence of flavonoids or polyphenolics compounds such as quercetin, isoquercetin, myricetin, anthocyanin etc. Flavonoids or polyphenols present are reported for their anti-diabetic activity. Anthocyanins, the natural colorants have also been shown to stimulate insulin secretion from pancreatic β -cells in vitro. Myricetin, a naturally occurring flavonoid, lowered blood glucose through improved glucose utilization. Herbal medicines have shown good clinical practice in the therapy of diabetes mellitus. The present review gives detailed information about diabetes mellitus and the various medicinal plants used in the treatment of the disease.

Keywords: *Diabetes mellitus; hyperglycemia; medicinal plants; active biomolecules.*

Ethnomedicinal Practices Among Traditional Practitioners in Darjeeling District and Their Importance in Drug Research

Souraditya Chakraborty

Assistant Professor

Department of Zoology

Garhbeta College, West Midnapore

E mail. : sourachak@gmail.com

Use of medicinal plants for treating ailments has been as old as the history of mankind. The presence and application of medicinal plants in Indian context has been variously mentioned in *Vedas*, *Samhitas* and other folklores especially in reference to the Himalayan region. In India, it has been recorded that more than 50% of the plant species of an ecosystem and nearly 7500 species of plant species are employed for procuring ethno medicine by various tribes (Badola and Aitken, 2003). Thus, documenting ethno medical use of plant extracts is of high priority in order to supplement translational research and drug discovery (Dutta and Dutta, 2003).

The native tribal people i.e., the inhabitants of the natural eco systems hold enormous amount of traditional knowledge regarding the treasure of medicinal plants that these areas preserve. This knowledge, if harnessed, can enlighten in on-going research and development of medicinal drugs and can have huge impact on treating numerous life threatening diseases.

Darjeeling Himalayan region, long since the times of *Rig Veda* (Mitra et al 1991), has been a heaven of medicinal herbs. Due to its enormous bio-cultural diversity, central and eastern Himalaya region (encompassing mainly the Darjeeling district, India), thus, has emerged as a happy hunting ground for the ethno biological scientists. Being a part of bio diversity hot spot, it harbours a huge amount of diversity in terms of herbs. The data represented here focuses on the district Darjeeling which lies between 26° 27' and 27° 13' N latitude and 87° 59' and 88° 53' E latitude and is one of the major parts of the eastern Himalayas. Several systems of herbal medicine are in practice in Darjeeling Himalayan region, viz., *Lepcha*, *Bhutia* and *Nepali* systems. However, the *Lepcha* system of herbal medicine has been the predominant form since long (Biswas and Chopra, 1982). Very sparsely documented and highlighted is the Nepali system of herbal medicine. It survives in the region at present in the name of *Jaributy* or simply as *Pahaday Dabai*. The information on these traditional medicines, their source and medicinal properties can be gathered from the spiritual healers (traditional practitioners) known as *Jhankri*, *Bijuwa*, *Boonthing*, *Baidang*, *Phedangma* and *Lama* (Rai and Bhujel, 1999). They rely on local herbs for preparing medicines to treat vast array of diseases. The chief inhabitants of this area are the *Gorkha*, *Lepcha*, *Bhutia* community.

A careful survey of the area provided information about the use of 41 traditional medicinal herbs among the different ethnic communities living in the villages and fringe areas of Darjeeling district. It has been seen that the inhabitants of Darjeeling hills are still inclined to the use of ethno medical medicines. One reason may be due to physical barriers that separates the hills from the plains. Hence, in order to harness the knowledge of the local practitioners, more emphasis has to be given on documentation, phytochemical and pharmacological

analysis of the herbs and even establishing an ayurvedic institute for drug research.

Keywords: *Ethnomedicine, Medicinal plants, Darjeeling, Drug, Herbs*

REFERENCES:

1. Badola HK, Aitken S: The Himalayas of India: A treasury of medicinal plants under siege. *Biodiversity* 2003, 4:3-13.
2. Biswas k and Chopra RN, Common medicinal plants of Darjeeling and the Sikkim Himalaya, *Sony Reprints Agency*, 1982
3. Dutta BK, Dutta PK: Potential of ethnobotanical studies in North East India: an overview. *Indian Journal of Traditional Knowledge* 2005, 4(1):7-14.
4. Mitra R, Jain S K. Medicinal plants research in India. A review. *Ethnobotany* 1991,3: 65-77
5. Rai, S.K and Bhujel, R.B, note on some less known ethno medical plants from the Darjeeling Himalyas, *J.Hill. Res.* 1999 , 12(2): 160-163

Half Lives of Various Radioactive Nuclides and its Practical Applications

Dr. Partha Roy Chowdhury

Assistant Professor, Department of Physics, Chandrakona Vidyasagar Mahavidyalaya,
Chandrakona Town, Paschim Medinipur-721201
E-mail: royc.partha@gmail.com

Abstract

A radionuclide (radioactive nuclide, radioisotope or radioactive isotope) is an atom that has excess nuclear energy, making it unstable. This excess energy can be used in one of three ways: emitted from the nucleus as gamma radiation; transferred to one of its electrons to release it as a conversion electron; or used to create and emit a new particle (alpha particle or beta particle) from the nucleus. During those processes, the radionuclide is said to undergo radioactive decay. These emissions are considered ionizing radiation because they are powerful enough to liberate an electron from another atom. The radioactive decay can produce a stable nuclide or will sometimes produce a new unstable radionuclide which may undergo further decay. Radioactive decay is a random process at the level of single atoms: it is impossible to predict when one particular atom will decay. However, for a collection of atoms of a single element the decay rate, and thus the half-life ($t_{1/2}$) for that collection can be calculated from their measured decay constants. The range of the half-lives of radioactive atoms have no known limits and span a time range of over 55 orders of magnitude.

The use of radioisotopes as tracers is well established all over the world. Up to now the great majority of isotopes used in this work have been those with comparatively long half-lives, that is the time taken for the radioactivity of these isotopes to decay to half its initial value is several days, weeks or even years. For example, the half-life of iodine-131, one of the most commonly used isotopes, is eight days.

Keywords: *Radio- isotopes; Short and long lived nuclides; Radioactivity; Half Lives; Applications.*

Biological Activities of Flavonoids: an Overview

Prithviraj Karak

Assistant Professor, Department of Physiology, Bankura Christian College,
P.O. + Dist- Bankura, Pin-722101.
E-mail: drpkarak@gmail.com

Abstract

Background: Plants and herbs consumed by humans are the rich sources of phytonutrients compounds synthesized in plants itself. Such bioactive substances are responsible for the plant's antioxidant and medicinal values. Flavonoids are a ubiquitous group of naturally occurring polyphenolic compounds characterized by the flavan nucleus and shows one of the most prevalent classes of compounds in fruits, vegetables and plant-derived beverages. Flavonoids are considered as the health promoting and disease preventing dietary supplements. It is now considered as an indispensable component in a variety of nutraceutical, pharmaceutical, medicinal and cosmetic applications.

Objectives: The main aim of this present review is to discuss the current trends of research and development on flavonoids, general working mechanisms of flavonoids, functions and applications of flavonoids, prediction of flavonoids as potential drugs in preventing chronic diseases and future research directions.

Discussion: Their basic structures consist of C6-C3-C6 rings with different substitution patterns to produce a series of subclass compounds such as flavones, flavonols, flavanones, isoflavones, flavanols or catechins and anthocyanins. Many flavonoids are shown to have antioxidative activity, free radical scavenging capacity, cardioprotective, antidiabetic, anti-inflammatory, anti-allergic while some flavonoids exhibit potential antiviral activities. More recently, flavonoids are proven to be effective as an anti-cancer agent, through apoptosis by induction of cell cycle arrest and inhibition of key enzymes involved in tumor promotion.

Keywords: *Phytonutrients; Flavonoids; Antioxidant; Cardioprotective; Anti-cancer.*

The Hidden Beauty of a Mango Pickle

Saswati Parua (Mondal)

¹Department of Physiology, Bajkul Milani Mahavidyalaya,
Purba Medinipur, West Bengal, India
E-mail: saswati.parua@gmail.com

Abstract

Pickle is synchronized with the traditional food culture of Indian people. There are varieties of pickles prepared from mango, cucumber, cabbage, olive, onion, etc., which are generally considered as appetizing food additives. Like the cultural diversity, people of different states of India produce varieties of mango pickles using the available types of green mangoes (*Mangifera indica* L). The fruit body of green mangoes are processed by means of different ways and then mixed with oil, salt, sweet and spices to produce different type of pickles with specific tastes. But, till date its quality and compositions are unexplored. This study is intended to explore a sweet jelly mango pickle which is very popular in Purba Medinipur district.

This pickle harbor diverse group of microbes including lactic acid bacteria ($6.81 \pm 0.24 \log_{10}$ CFU/gm), *Bifidobacterium* sp. ($7.18 \pm 0.26 \log_{10}$ CFU/gm), yeast ($8.64 \pm 0.33 \log_{10}$ CFU/gm) and mould ($7.26 \pm 0.24 \log_{10}$ CFU/gm). The activity of α -amylase (1.71 ± 0.21 U/gm) was very low, but, the phytase activity was much high (422.20 ± 10.51 U/gm). Alongside, free reducing sugar ($450.15 \mu\text{g/gm}$) and protein content ($8.573 \pm 1.01 \mu\text{g/gm}$) were also present in high quantities. Furthermore, it showed strong antioxidant activity against DPPH ($57.32 \pm 3.14 \%$) and ABTS ($29.19 \pm 2.61 \%$) free radicals.

This preliminary observation indicated that the sweet mango pickle of Purba Medinipur district is enriched with different nutrients and bioactive metabolites after fermentation with naturally occurring groups of health beneficial microbes.

Alpha Lipoic Acid as a New Potential Weapons against Oxidative Stress related Chronic Diseases

Dr. Shrabani Pradhan

Assistant Professor in Nutrition, Department of Biological Sciences, Midnapore City College, Paschim Medinipur, West Bengal.

Abstract

Alpha lipoic acid is a sulphur-containing antioxidant that acts in both aqueous and lipid fractions of cells and tissues. It is also known as thiotic acid, 1, 2-dithiolane-3-pentanoic acid, 1, 2- dithiolane-3-valeric acid and 6, 8-thiotic acid. Due to having both water and fat solubility nature of alpha lipoic acid, it is readily absorbed from an oral dose and converts to its reduced form dihydrolipoic acid (DHDLA) in many tissue of the body which acts as powerful antioxidant in oxidized and reduced form. Alpha-lipoic acid acts as a cofactor for several important enzymes in mitochondria in almost all the tissue of the body. ALA can be found in foods such as meats and vegetables, especially broccoli and spinach. It is easily absorbed into the bloodstream, and it can also cross the blood brain barrier. Two of the best natural sources of lipoic acid are yeast and liver, but the body can synthesize it when necessary and it is available as a supplement. Alpha-lipoic acid is a potent reducing agent, and has the capacity to regenerate a number of oxidized antioxidants to their active antioxidant forms. Alpha-lipoic acid is considered as a counteract agent for heavy metal toxicity as ALA/DHDLA is considered as chelator compounds because they are able to chelate divalent transient metal ions both in vivo and in vitro by different mechanisms of action. Alpha-lipoic acid is unique among biological antioxidants, because it is soluble in both water and lipids. This allows it to neutralize free radicals which is produced about everywhere in the body, inside and outside the cells. Alpha-lipoic acid is a nutritional coenzyme that participates in the energy metabolism of proteins, carbohydrates and fats. Alpha-lipoic acid acts in the body as part of several multi-enzyme complexes located in the mitochondria that catalyze the oxidative decarboxylation of α -keto acids such as pyruvate, α - ketoglutarate which essential for metabolizing carbohydrates, proteins, and fats, for the conversion of their energy into ATP. Besides this, alpha lipoic acid mitigates the symptoms of acetaminophen and carbon tetra chloride induced uremia and oxidative stress and prevents the different stages of kidney disease by its strong anti oxidative properties.

Key words: Alpha lipoic acid, Antioxidant, Oxidative stress, uremia, free radicals

***Asparagus racemosus*: a Brief Review on Its Medicinal Properties and Conservational Needs.**

Suchismita Roy^a, Sanjay Kar^b, Dilip Kumar Nandi^c

^aDept. of Biological Sciences, Midnapore City College,
Kuturia, Bhadutala, Paschim Medinipur- 721129

^bDept. of Botany, Midnapore College (Autonomous),
Midnapore, Paschim Medinipur-721101

^cResearch Unit, Developed by Dept. of Physiology, Nutrition and Microbiology,
Raja N L Khan Women's College, Midnapore, Paschim Medinipur- 721102

Abstract

Aromatic and medicinal plants have played key roles in the lives of tribal peoples by providing products for both food and medicine. *Asparagus racemosus* is an important medicinal plant of tropical and subtropical India and used for many purposes and show many biological activities in Ayurveda.

It is used for prevent ageing, increase longevity, impart immunity, improve mental function, nervous disorders, dyspepsia, tumors, inflammation, neuropathy, nephropathy and hepatopathy. The roots of this plant is mainly known for its phytoestrogenic properties with increasing realization that hormone replacement therapy with synthetic oestrogens is neither safe and nor effective as previously envisaged, the interest in plant-derived oestrogens has increased tremendously making *Asparagus racemosus* important. The plant has been shown to have its effect for the treatment of neurodegenerative disorders and in alcohol induced withdrawal symptoms. In Ayurveda, *Asparagus racemosus* has been described as a rasayana herb and has been used extensively as an adaptogen to increase the non-specific resistance of organisms against a variety of stress. Besides use in the treatment of diarrhoea and dysentery, the plant also has potent antioxidant, immunostimulant, anti-dyspepsia and antitussive effects.

The major active constituents of *Asparagus racemosus* that exert its bioactivity are a group of steroidal saponins (Shatavari I-IV), a group of vitamins and minerals, (vitamins A, B₁, B₂, C, E, Mg, P, Ca, Fe, and folic acid), essential oils, asparagine, arginine, tyrosine, flavonoids, resin, and tannin.

The most important thing to notice is that numerous applications of this plant in various formulations have raised the demand of the plant leading to its overexploitation. So, alternative strategies for propagation and conservation are urgently required to prevent the species being threatened.

Keywords: *Asparagus racemosus*; Ayurveda; Nephropathy; Phytoestrogenic; Saponin;

Electrical Conductivity And Luminescence Properties of Two Silver (I) Coordination Polymers With Heterocyclic Nitrogen Ligands

Dr. Abhinandan Rana

Dept. of Chemistry, Garhbeta College, Garhbeta, Paschim Medinipur, 721 127.

E-mail: rana_abhinandan@yahoo.co.in

The synthesis and X-ray structural characterization of two novel silver(I) coordination polymers, $[\text{Ag}(\text{NO}_3)(\text{quin})]_n$ (**1**) and $[\text{Ag}_8(\text{HL})_2(\text{H}_2\text{O})_4(\text{mpyz})] \cdot 3\text{H}_2\text{O}$ (**2**) are reported, where quin = 5,6,7,8-tetrahydroquinoxaline, H_6L = cyclohexane-1,2,3,4,5,6-hexacarboxylic acid and mpyz = 2-methyl pyrazine. The structures determined by X-ray single crystal diffraction analysis show that complex **1** is a 2D coordination polymer with a rectangular network having quinoxaline and nitrate anions as edges. Complex **2** is a 3D architecture stabilized by argentophilic interactions comprising four crystallographic independent silver ions. It is well-known that electrical conductivity of classical covalent polymers has attracted the interest of many researchers in material science. Electrical conductivity of order $3 \times 10^{-4} \text{ Scm}^{-1}$ (**1**) and $1.6 \times 10^{-4} \text{ Scm}^{-1}$ (**2**) is measured on thin film specimen at room temperature. The photoluminescence and thermal properties of the complexes have also been studied.

References

- [1] A. Rana, S.K. Jana, T. Pal, H. Puschmann, E. Zangrando, S. Dalai, *Journal of Solid State Chemistry*, 2014, 216, 49-55. [2] A. Rana, S.K. Jana, M. Bera, D. Hazari, D.S. Chowdhuri, E. Zangrando, S. Dalai, *Journal of Solid State Chemistry*, 2013, 197, 46–52.
- [3] A. Rana, S.K. Jana, S. Datta, R.J. Butcher, E. Zangrando, S. Dalai, *Journal of Solid State Chemistry*, 2013, 207, 61–68.

Sea Food Safety and Natural Marine Toxins

Prof. Sandip Das

Head, Dept. of Nutrition and Dietetics, Vidyasagar Institute of Health, Rangamati, Paschim Medinipur,
Vidyasagar University, 721102, Email-SandipvihDas@gmail.com

Abstract

We live in a sea of toxins. Worldwide exposure to natural and man-made pollutants continues to increase, resulting in increased contamination of our air, water and food supply that potentiates our health hazards. Sea food toxins are produced as a result of consumption of sea fish and other sea animal. Sea food poisoning is generally seen in the coastal region of the world where marine foods constitute about 10% of the diet.

Ciguatera poisoning, shell fish poisoning are seen in the coastal region of the world. Generally four types of shell fish poisoning are seen paralytic shell fish poisoning (PSP), diarrhetic shellfish poisoning (DSP), neurotoxic shell fish poisoning (NSP) and amnesic shellfish poisoning (ASP).

Key words: *Shellfish poison, Ciguatera, Paralytic shellfish, Diarrhetic shellfish.*

Some studies of security scheme in long distance optical communication by using soliton and its impact on environment.

Dr. Abhijit Sinha

Department of Physics

Bankura Christian College, Bankura – 722101

Email: sinhaabhijit74@rediffmail.com

Abstract

The field of computation and data processing is growing day by day. Massive parallelism speed of operation, increased spatial density attracts many ways to the scientists, researchers and technologists. It appears that optical technology be the only technology capable of achieving multi terabit per sec communication. The inherent massive parallel processing capabilities of light has made optics a strong candidate in the field of computation and information processing. Optical soliton already established its strong candidature in optical fiber based communication system. Use of optical soliton is a well- established phenomenon in digital communication because of soliton pulses remains almost unaltered their shape and potential after propagating long distance. Now a day's communication system also demands very fast and high security communication. Question of security in communication can be managed easily by the nonlinear optical phenomenon. In his regard we consider the interesting behavior of soliton pair conversion in nonlinear wave guide.

Her we consider that the generated soliton pair are the orthogonal pulses and can be recognized as an entangle photon pair that can be used to form the random code for information security application. The coincident soliton pair is randomly separated at the output port by using the security checking between the sender and the end user the confirmation of required information can be realized. In that process we reduce the use of copper cable and using only optical fiber, we minimize the cost in communication system. As optical fibers are environment friendly then it have a great impact in communication system that is in environment.

Keywords: *Optical Soliton; Optical Fiber; All Optical Communication; Soliton Conversion; Environmental Impact.*

Documentation of Some Wild Edible Plants in Bankura District, West Bengal, India

Dr Arpita Banerjee

Assistant Professor, Department of Botany,
Bankura Christian College,
Bankura-722101, West Bengal, India,
E mail- arpitabanerjeebcc@rediffmail.com

Abstract

In India, most rural communities depend on the wild resources including wild edible plants to meet their food needs in periods of food crisis, as well as for additional food supplements. Millions of the people in many developing countries do not have enough food to meet their daily requirements and a further more people are deficient in one or more micronutrients. The nutritional value of traditional wild plants is higher than several known common vegetables and fruits. The present communication deals with the ethnobotanical exploration, identification, concerns and future potentialities of the wild edible plant species consumed by different tribal communities inhabiting in the adjoining forest area of Bankura district, West Bengal, India. A total of 50 plant species belonging to 38 families, and to 48 genus were reported from our study area. Tribal people mainly possess immense knowledge of varieties of plants, their fresh and fermented products and their uses as food and medicines to attain nutritional security. The four major life forms are mainly found i.e. herbs, shrubs, trees and climbers. Herb makes up the highest proportion of the edible species followed by trees, shrubs and climbers. The present finding support further investigation into nutritional profits, pharmacological prospects and conservational studies.

Key Words: *Bankura; Wild; Edible plants; Ethnobotanical biodiversity; Nutrition; Traditional medicine.*

Some Ethno-Medicinal Plants as Anti-Asthmatic Agent in Bankura Districts, West Bengal, India

Dr Arijit Sinhababu

Assistant Professor, Department of Botany,
Bankura Christian College, Bankura, Pin.- 722101, West Bengal, India.
E mail.- arijitsinhababu@rediffmail.com

Abstract

Our country is commonly called the Botanical Garden of the world, owing to her wealth of herbal medicines. India with its great topographic and climatic diversity has a very rich and diverse flora and fauna. The uses of plants as medicines have been practiced from an ancient time. Ethno-medicine means the medical practices for the treatment of ethnic or aborigine people for their health care needs. Indigenous traditional Knowledge is an integral part of the culture and history of a local community. Recently, around 279 million people around the globe suffer from asthma and these numbers have been rising worldwide. So, asthma has emerged as a major public health problem. Plant drugs are considered as safe and effective since they are natural products. The present paper documented 24 ethno-medicinal plants of Bankura district, West Bengal, India belonging to 15 families were used by the local health healers for the treatment of asthma. The information documented in this work is totally from primary sources being based on the uses of the locally available plants by the people as their household remedies.

Key words: *Anti-asthmatic agent; Bankura; Ethnobotanical biodiversity; Traditional Medicine.*

Antiepileptogenic Effects of Turmeric In Pre-Obese Epileptic Patient: a Case Study

Swapan Banerjee

Address : 37/1, Panchanan Tala Road, Belghoria, Kolkata -700056.

Email Id – dietchartexpert@gmail.com

Abstract

Background : Epilepsy is the fourth common neurological disorder characterized by seizures which can affect anyone. The ketogenic diet is the best nutritional option apart from antiepileptic medicines. One of the low-cost spice, turmeric can be helpful therapeutically while incorporated in keto diet due to the presence of compound curcumin which has anti-convulsive effects.

Objective: To find out the beneficial & antiepileptogenic effects of turmeric on a 30-year-old unmarried pre-obese woman.

Methods: A 30year old unmarried working woman with height 166 cm & weight 75kg, visited diet clinic for ketogenic diet after her first tonic-clonic seizure with her father . She was under anti-seizures medication diagnosed with a scar in brain & intermittent convulsions. She was also depressed about overweight due to stubborn fat & allergies. As per advice, she started with keto diet plan incorporated with 5gm of raw turmeric to eat by chewing on empty stomach at everyday morning. Under observation on every 45days interval, Keto diet was replaced to Atkin diet & subsequently to Paleo diet plan with the same 5gm of raw turmeric.

Results: After 1st visit 4th visit, there is no report of single convulsion rather lost weight 5 kg. Further, symptoms of allergies were also very less & patient was positive in mind, as noticed.

Conclusions: Turmeric enriched with curcumin has beneficial roles in epilepsy & weight loss.

Keywords: *Antiepileptogenic turmeric; Anticonvulsant turmeric; Beneficial role of turmeric; Turmeric for obesity; Turmeric in keto diet.*

Seed Invigouraton of a Grass Pea Species Using Herbal Extracts Under Storage

Chandan Kumar Pati

Department of Botany, Saldiha College (Affiliated to Bankura University),
Saldiha-722 173, Bankura, West Bengal, India
E-mail: cpbotany@yahoo.co.in

Abstract

An investigation was carried out on enhancement of seed invigouration of a grass pea species by using some selected plant extracts. Pretreatment of grass pea (*Lathyrus sativus* L.) seeds with aqueous solutions of leaf extracts of tulsi (*Ocimum sanctum*) and bel (*Aegel marmelos*) 25g in 1000 ml distilled water of each for 2 hours and then dried back to the original dry weight of the seeds before accelerated ageing treatment (99.5% RH and $32 \pm 2^{\circ}\text{C}$) for different durations (0 to 30 days) slowed down the rapid loss of germination and reduced the time (h) required for 50% germination (T_{50}) of seeds. The plant extracts also significantly arrested the reduction of protein, insoluble carbohydrate as well as activity of catalase enzyme of seed kernels during forced ageing period. Conversely, ageing-induced stimulation of the activity of amylase enzyme was alleviated by the seed pretreating agents. Thus, the promising effects of the experimental plant extracts on storage potentiation of the grass pea seeds are apparent in this investigation.

Key words : *Grass pea, Ocimum, Aegel, storage potentiation, accelerated ageing.*

World Food *Spirulina*: Nutritional Value and Health Benefits

Shilpa Dinda¹ and Amal Kumar Mondal²

¹Department of Botany, Midnapore City College, Kuturia, Bhadulata, Midnapore,
Paschim Medinipur

²Plant Taxonomy, Biosystematics and Molecular Taxonomy Laboratory
UGS-DRS-SAP Department, Department of Botany and Forestry, Vidyasagar University
Midnapore-721102, West Bengal, India

e-mail: akmondal@mail.vidyasagar.ac.in, shilpadindabotvu@gmail.com

Abstract

Spirulina is a Cyanobacterium (Oscillatoraceae) which has acquired the ability for photosynthesis. These organisms might be considered as ancestor of all higher plants. Concentrated nutrition of *Spirulina* makes it an ideal food supplement for people of all ages and lifestyles. It contains 60% digestible protein concentration which compared about 5 times higher than meat. *Spirulina* provides the majority of essential and non essential amino acids, beta-carotene, a precursor of vitamin –A, Vitamin – B12, unsaturated fatty acid – Gamma linolenic acid (GLA), minerals particularly iron and calcium. The antioxidant properties of *Spirulina* are well known and anticancer action has also been reported. *Spirulina* plays an important role in health benefits viz. protection of liver and kidneys, improvement of blood quality and prevention of anaemia, benefits of diabetes, reduction in blood pressure, removal of heavy metals from the body, radioprotection, prevention of liver and renal toxicity, antioxidant action, immune protection and relief in allergic reaction. The effectiveness of *Spirulina* is very rapidly recognized and used of in the treatment and management of various life threatening disease. The potential health benefits of *Spirulina* must be adequately recognized and implemented thus making full use of this nature's gift.

Key words : *Spirulina*; Superfood; Nutrient content; Health benefits.

Effect of Phytonutrient on Skin Health

Titli Panchali

Dept. of Nutrition and Dietetics, Midnapore City College

Email: titlipanchali19@gmail.com

Abstract

Skin cancer is a common, usually low grade cancerous (malignant) growth of the skin. Skin is easily affected by UV damage, which can lead to cancer. Possible mechanism by which this occurs include oxidative damage and inflammation. A diet rich in phytonutrients, including flavonoids, β -carotene, lycopene may produce continual whole body protection from such damage. Phytonutrients support a role for diets high in these food components and decreased risk of photoaging and cancer. Stronger evidence proves that supplementation with flavonoids, β -carotene, lycopene, polyphenols, and various nutrient combinations can protect from shorter-term markers of UV damage including lipid peroxidation, DNA damage, and apoptosis. Similar results are observed from topical treatments of these nutrients. Further investigation of optimal doses and mechanism of protection are needed to better target and prevent photodamage with dietary and/or topical treatments. Phytonutrients cures not only skin cancer but also it helps to protect many skin diseases i.e. eczema, hair loss, discolouration of skin etc.

Keywords: *Skin Cancer; Phytonutrients; Favonoids; Photoaging.*

Prevalence of low birth weight in low socio economic group of slum area Bankura District

Tultul Chowdhury

Guest teacher, Bankura Christian College, Bankura 722101

Corresponding to: tuli.nutrition@gmail.com

Birth weight is the most important factor that affects infant and child mortality. The study of this project is conducted in a low socio economic group of slum area of Bankura District to observed that proportion of low birth weight in this group and to find out the comparison between nutrient intake and actual requirement of mother of low birth weight babies. An interview technique is conducted with the mother to collect the information about dietary habit and other associated general data of mother. The prevalence of low birth weight is about 30% in this group and there is significant difference of nutrient intake and actual intake of mother of low birth weight babies. The main factors which were singnificantly associated with LBW were maternal education, stature, age at delivery, inadequate anti natal care and per capita income of family.

Key words: *LBW child, low socio economic group.*

Junk food and its impact on health

Moumita Dutta

Guest teacher, Bankura Christian College, Bankura 722101

Corresponding to: moumitadutta031@gmail.com

Abstract

Nutrition is the food that is essential for good health throughout our life. Healthy nutritious food have been replaced by the new food mantra-JUNK FOOD. Lifestyle changes has compelled us so much that one has so little time to really think what we are eating is right: Junk food deficient with nutrients, on the other hand it is added with food colors and additives to enhances the texture, flavour, and long shelf life. Junk food dense in calories, high level of sugar, trans fat, cholesterol and high level of sodium which simultaneously leads to form the acetyl COA, methylglyoxal (MG), oxysterol. The metabolic by products of junk food have an adverse effect on human body and it lead to obesity, type 2 diabetes, stroke and heart disease, gastritis, asthma, hyperactivity etc. Junk food have certainly curved up the third World due to globalization. It is all our hand to choose junk food or heath. Junk food is the name is tempting enough eliminating the temptation is one way to avoid it.

Key words- *Junk food, Health, Diseases*

Increasing Non-Communicable Diseases Due to Biodiversity of Environment in Bankura District

***Dibyendu Dutta¹, Dilip Kumar Nandi^{2, 3, 4}**

¹Research Scholar, Food & Nutrition Science, Sri Satya Sai University of Technology & Medical Science, Sehare, Madhya Pradesh.

²Associate Professor & HOD, Department of Physiology, Raja N. L. Khan Women's College, Midnapore, West Bengal

³EC Member of Physiological Society of India (PSI),

⁴Vice President of South Asian Association of Physiologists (SAAP)

Correspondence to:- Dilip Kumar Nandi (E-mail: dilipnandi2004@yahoo.co.in)

Abstract

Non communicable diseases (NCDs) are the upcoming threatening towards the public health. It has been noted that furiously increasing of NCDs afflicted by different types of environmental diversity, can achieved the maximum health hazards in the world. Beside that, till developing Malaria, Dengue and other Communicable disease also are imparting diversified symptoms now a day rather than it noted in books. Some patients are asymptomatic in preliminary stages. Now a comprehensive study was carried out by developing secondary data from bankura district data management systems in officials web site of Dept. of H&FW, P.H.E.D., S.W.I.D.S. and Bankura Zilla Parisad. Geological earth crust disorientation by mining with inappropriate methods and to achieve quick commercial benefit, now leads to improving silicosis, fluorosis, arsenicosis like NCDs. Increasing environmental and industrial pollutants containing silica, fluoride, aluminium dust, arsenic intermediates is also increasing the NCDs in Bankura district. Underground water level was going down day by day by promoting burring water pump. Increasing no. of Deep tube well also found in bankura district. Although no such cases of arsenicosis patients in bankura district has found but 67 % of dental fluorosis and 09 % of disabled skeletal fluorosis , 1082 cases of silicosis-TB cases has been found by intimated the house to house survey in pre-defined endemic arrears .A independent comprehensive study is very essential to be perform to attach such factors together in respect of increasing NCDs cases in bankura district to set up a conclusion to improve new health & water management policies for better public health services.

Keywords: *Non communicable diseases (NCDs), Bankura , Silicosis, Fluorosis, Public health*

Water Soluble Graft Copolymers Based on Natural Polysaccharides for Waste Water Treatment

Haradhan Kolya and Tridib Tripathy*

Postgraduate Division of Chemistry, Midnapore College (Autonomous), Midnapore,
Paschim Medinipur-721101, West Bengal, India

Corresponding author, e-mail: haradhankoley@gmail.com / tridib_tripathy@yahoo.co.in

Abstract

Background: There is 75% water in the earth, but availability of pure water for sanitation, industrial process and drinking, is not enough. Since pure water is most valuable, reuse of water obtained from the effluents and waste water is a common practice for all the processing industries. Water pollution occurs by various industrial effluents and wastes that create environmental pollution. The pollutants present in the effluents are the varieties of suspended and colloidal organic materials, soluble salts of toxic metal ions, suspended solid particles etc. Thus waste water and industrial effluents are harmful to aquatic life because of the presence of toxic impurity.

Objectives: Decontamination of waste water should be performed using cost effective agents like graft copolymers which are biodegradable and shear stable due to the presence of polysaccharide backbone.

Methods: Synthesis of polysaccharides graft copolymers was performed by aqueous phase polymerization techniques using $K_2S_2O_8$ as an initiator. Synthesized graft copolymers were purified by solvent extraction technique. Purified, pulverized and dried copolymers were used for characterization using different characterization techniques like SEC, FTIR, TGA, XRD and SEM. These characterized graft copolymers were used for different biological applications.

Results: Characterization results support the formation of graft copolymers based on polysaccharides and acrylic moieties. Flocculation performances as well as colour removing performances of synthesized graft copolymers was found better than some commercially available flocculants.

Conclusion: Decontamination of waste water was performed successfully by graft copolymers. Water pollution can be decreased with proper use of these polymeric substances.

Keywords: *Polysaccharides; graft copolymers; decontamination; waste water; flocculation; adsorption.*

Some Traditional Medicinal Plants are Used for Health Benefit in Paschim Medinipur, West-Bengal, India

Antara Adhikary, Tapasi Mondal and Shilpa Dinda

Department of Botany, Midnapore City College, Katuria, Bhadutala,
Paschim Medinipur, West Bengal

Email – tapasimondalmandal2018@gmail.com, shilpadindabotvu@gmail.com

Abstract

Traditional Medicinal plants are the sum total of the knowledge, skill and practice based on the theories, benefit and experiences indigenous to different cultures, wheather explicable or not, used in the maintains of health as well as prevention, diagnosis, improvement or treatment of physical and mental illness. Total 43 medicinal plants are practiced for various elements. The data is collected during our field trips on the basis of interview, observation and discussion with village local practitioners and women folk and elderly persons. In this study 43 medicinal plants belonging to 33 families curing of different disease viz. Common cold, cough, fever, amoebiasis dysentery, diarrhoea, skin disease, hair falling etc. Different plant parts are used for curing different disease.

Key words: *Indigenous knowledge; Medicinal Plants; Curing disease; Paschim Medinipur*

PCOS: A Hidden Syndrome

Amina Khatun, Indu Gorai

Dept. of Nutrition & Dietetics, Midnapore City College, Midnapore, West Bengal

Abstract

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in the women of reproductive age. The term “polycystic ovary” refers to the many tiny cysts or bumps in the ovary. Although the exact cause is unknown, a hormonal imbalance causes the symptoms PCOS. Women with PCOS produce higher than normal amount of male hormones (androgens). This hormonal imbalance causes them to skip menstrual period and makes it harder for them to get pregnant. PCOS also causes hair growth on the face and body and baldness. And it can contribute to long term health problems like diabetes and heart diseases. There are a variety of treatments available which can effectively control the symptoms. The treatments are such as hormonal treatment, diabetes medication, clomiphene, surgery, weight management. The PCOS patients need a proper diet which help them with weight management, prevent diabetes and heart diseases and regulates blood sugar levels and the menstrual cycle.

Keywords: *Polycystic ovary; Ovary syndrome; Hormonal regulation; Dietary management.*

Butter milk: A Lost Superfood

Archana Hembram, Bani Paul, Priya De

Dept. of Nutrition & Dietetics, Midnapore City College, Midnapore, West Bengal

Abstracts

Milk had been a part of food since the dawn of civilization and also consider as a complete food of human beings. The fermented of milk is also an ancient technique for the presentation of milk. Butter milk was one of the fermented milk products which called “Grandma's probiotics”. Butter milk, a liquid, that left after butter had been made from milk or cream. Butter milk was a various nutrient rich food. It was a good source of protein, calcium, potassium and sodium. Milk fat globule membrane (MFGM) found in butter milk was rich in unique bioactive protein. MFGM protein possesses biological activities such as cholesterol lowering, antiviral, antibacterial and anticancer properties. Beneficial effects of butter milk were- fight acidity, improve digestion and dehydration, reduce blood pressure and risk of cancer, builds strong bones. Specially butter milk works for lactose intolerance people. Butter milk was the one showing the highest emulsifying properties and the lowest foaming capacity. Butter milk appears to be a promising and unique ingredient in the formulation of low pH foods. In old days butter milk was popular but now use of butter milk is decreasing day by day. So butter milk should be preserved and popularize as it is a healthy food other than available fermented products.

Keywords: *Butter milk; Probiotics; Nutritive value; Emulsifying.*

***Centella asiatica* (L.): a Plant With Immense Medicinal Potential**

Biswajit Das¹, Sumit Kumar Bhunia¹

Dept. of Nutrition and Dietetics, Midnapore City College, Kuturia, Bhadutala, Midnapore, Paschim Medinipur

Abstract

In recent times, focus on plant research has increased all over the world. *Centella asiatica* L. has been used as a medicinal herb for thousands of years in India, China, Srilanka, Nepal and Madagascar. *Centella asiatica* (L.) is a prostrate, faintly aromatic, stoloniferous, perennial, creeper herb, attains height up to 15cm (6inches). Stem is glabrous, striated, rooting at the nodes. The rich and variety of chemical constituents are present in it such as asiaticoside, tannin, hersapanin, tritenpene, thalkunide, better ptrincle (vallanine), hydrocotylin. *Centella asiatica* is one of the chief herbs for treating skin problems, to heal wounds, for revitalizing the nerves and brain cells, hence primarily known as a "Brain food" in India. *Centulla asiatica*, is commonly known as thankuni. It is an important herbal remedy of diseases as ayurvedic medicine. In ayurvedic practice is has a valuable helping to retard the aging process. So, the chemical constituents have medicinal properties as uses. The leaf juice uses as a good health tonic and get relief from hypertension. The total triterpenes had antidepressant activity and caused significant reduction of the corticosteroid level in serum. Pectin isolated from *C. asiatica* showed immunostimulating activities and triterpenoid saponins and methanol extracts showed preliminary immunomodulatory effect. It is an essential herbal natural product for brain and nervous system. It help to memory, cognitive function, improve circulation and support better wound healing. It has been uses to treated various disorder like ulcer, anxiety, inflammatory, fertility, cardiovascular disease, cancer, stress etc. clinical study shown it has several pharmacological role for producing medicine.

Keywords: *Thankuni; Immunity; wound healing; cancer; fertility; anxiety.*

Candying and dehydrating of fruits and vegetables

¹Jhili Shit, ¹Priya Das, ¹Riya Basuli

¹Dept. of Nutrition & Dietetics, Midnapore City College, Katuria, Bhadutala, Midnapore, Paschim
Medinipur

Abstract

Fruits and vegetable are dried to enhance storage stability, minimize packaging requirement and reduce transport weight. Candying of fruits also known as crystallized fruit is prepared by using whole fruits, smaller pieces of fruits, pieces of peel are placed in heated sugar syrup that absorb the moisture from fruit and eventually preserve fruits.

Preservation of fruits and vegetables through drying based on sun and solar drying technique which causes poor quality and products may be contaminated. An optimum drying system for the preparation of quality dehydrated products is cost effective as it shortens the drying time and cause minimum damage to the product to reduce the energy utilization and operational cost new dimensions came up in drying technique. Among the technologies osmotic dehydration, vacuum drying, freeze drying, superheated steam drying, heat pump drying and spray drying have great scope for the production of quality dried products and powders. Candying and dehydration of fruits and vegetables are done to prevent food spoilage, increase shelf life and can easily be transportable with minimum packaging cost.

Keywords: *Candying; Preservation; Contamination; Dehydrate; Freeze drying; Spoilage.*

Cosmo Nutrition

Arunita Jana, Jhinuk Nandi

Dept. Of Nutrition and Dietetics, Midnapore City College, Medinipur , West Bengal

Abstract

Cosmo nutrition is the term used to denote any substance or product that is used in the purpose of improving nutritional status as well as used as beauty products. Name of the ingredient of cosmo nutrition like turmeric, honey, grapes, cucumber, tomato, curd etc. Turmeric contains antioxidants & inflammatory compounds. These characteristics may provide glow & lesser to the skin. Raw honey is incredible for our skin, thanks to its antibacterial properties & hefty serving of skin saving. Cucumber is a very popular & common ingredient to be used in skin care product. It is full of antioxidant nutrients as well as beta carotene, vit – C, manganese. It is necessary to consume tomatoes as they have lycopene, which is an antioxidant & hence works as sunscreen from within. These antioxidants make tomato an antiaging product as they help in fighting cellular damage and reddening of skin. Grapes are an elixir for our skin. Regular consumption & application of grapes can give us smooth & supple skin. Curd is rich in lactic acid, in natural alpha hydroxy acid, that helps to improve our complexion & makes it softer & more radiant. This application wards off premature wrinkles and age spots too.

Key words – *Cosmo nutrition; Turmeric; Honey; Cucumber; Curd; Tomato*

Effects of Soft Drink too Much Consumption on Nutrition and Health

Priyanka Kar¹, Ananya Giri¹

¹Dept of Nutrition and Dietetics, Midnapore City College, Midnapore, West Bengal

Abstract

All living organisms including human beings in this biosphere are constantly exposed to a variety of xenobiotics. The enormous chemical load in the environment has been primarily through the modernization, industrialization and changes in lifestyle. The changing food habits to suit modern living pose a serious threat to a healthy life. Among others, consumption of soft drinks invariably forms a part of modern life. Mostly children and adolescents are the target groups vulnerable to frequent consumption, compromising the nutritious foods such as fruits, vegetables, milk and milk products. Soft drink is a carbonated water sweetener and have natural artificial flavouring. This sweetener may be contain high sugar substitutes. There are two categories of soft drink like Pepsi, coke and another is non carbonated soft drink like juice, squashes. They are contain high amount of sugar carbonated water sweetener, different type of colour and flavour used soft drink in consumption of too much can effect body nutritional level and suffer from some health problem. Health problem in our body such as osteoporosis, increased risk of type-II diabetes, asthma, renal problem, sugar overload in body dissolved, teeth enamel, some metabolic disorders. Soft drink too much consumption are viewed by major contributor to obesity and related health problem and have consequently been targeted rising prevalence of obesity, particularly among children.

Key words: *Soft drink; sweeteners; obesity; diabetes; metabolic disorder.*

Health Impact of Polyphenols in Fruits and Vegetables

Rituparna Chakraborty, Labani Mondal

Department of Nutrition and Dietetics, Midnapore City College, Kuturia, Bhadutala, West Bengal.

Abstract

Polyphenols represent a group of chemical substance common in plant, structurally characterized by presence of one or more phenols units. Its are found in plant basedfoods and beverages like apple, berries, citrus fruits, plums, broccoli, tea, coffee and many others. Adiet high in Polyphenols that protect against developing cardiovascular diseases, type-2 diabetes etc. The gut micro biota plays a critical role in absorption. The biological properties of dietary Polyphenols are greatly depended on their bioavailability that is largely influenced by their degree of Polymerization. The gut micro biota play a key role in modulatory the production, bioavailability and thus the biological activities of phenolic metabolites, particularly after the intake of food containing high-molecular-weight Polyphenols. The involvement of Reactive oxygen species (ROS) in the etiology of this degenerative condition has suggested that phytochemicals showing antioxidant activity may contribute to the prevention of these pathogenesis. For example, flavanols decrease endothelial dysfunction, lower blood pressure and modulatory energy metabolism coffee and tea both reduced the risk of developing type-2 diabetes though the action of their constituent Polyphenols.

Keywords: *Polyphenols; ROS; CVD; Diabetes; Biological; Antioxidant; Microbiota.*

Omega 3 fatty acid for skin health

Saswati De¹, Priya Kar¹, Saheli Jana¹,

¹Department of Nutrition and Dietetics, Midnapore City College

Abstract

Omega 3 fatty acid, also known as polyunsaturated fatty acids (PUFA), are essential fatty acids, which are substances that the body cannot manufacture. They are vital to the human body function, as well as normal growth and development and reduce inflammation.

Skin benefits from omega 3 fatty acids involve the epidermis, the skin's outer layer. With increasing age the cells become thinner and less sticky. This decreases the barrier function of the epidermis allowing moisture to be released from the skin, causing dryness. Also as epidermal cells start to decrease, the skin slowly loses its ability to repair itself efficiently. Simultaneously, the structural elements that support the skin start to thin. All of these changes promotes wrinkling.

Omega 3 fatty acids strengthen the skin cell membrane of the epidermis. The skin cell membrane is the outer layer of skin cell and it monitors the intake and disposal of nutrients and wastes products entering and leaving the skin cells. The skin cell membrane also influences the ability of the cell to hold onto water. Therefore, if the skin cell hold onto water, it leads to moisture, softer skin, which promotes wrinkle prevention and may eradicate existing mild wrinkles. Omega3 fatty acids contribute to the upkeep of the skin cell membrane, improving the texture and quality of the skin.

The sun's ultraviolet light increasing the aging process of the skin. Research has demonstrated that omega 3 fatty acids can play a role in decreasing skin damage from UV light and the production of cancer cells caused by the UV light. EPA helps block the release of substance that eats away at the collagen in our skin after skin exposure. It has also been shown to contribute wound healing because of anti-inflammatory properties. It has been used to treat atopic dermatitis and acne.

Keywords: PUFA; Wrinkling, EPA; Anti-inflammatory; UV-Rays; DHA; Cancer cells; Atopic dermatitis; Acne.

Preventing Cancer by Changing Our Food Habits

Sumita Roy, Srirupa Sasmal, Biswajit Das*

PG Department of Zoology, Midnapore City College, PaschimMedinipur, West Bengal.

Abstract

Cancer is a very dangerous and life taking problem in modern days. Now about 90.5 million people suffer from various types of cancer. So this is becoming a major challenge day by day. Though reason of cancer is unknown in maximum case but according to many scientists we can prevent cancer to such a level by changing our food habits in our daily diet. Many food which we intake regularly causes cancer like Hydrogenated oils(e.g. vegetables oil), Potato Chips, Microwave popcorn, Red meat, Farmed salmon, Refined sugar or soda etc. So we have to be careful about those foods. Just like this foods there are many food which can help to prevent cancer such as leafy green vegetables, Berries, Brightly orange coloured fruits, Citrus fruits, Sweet potatoes, Fresh herbs and species, Organic meats, Cultured dairy products, Nuts and Seeds etc. Now a days we are habituated to take junk food which are harmful to our health. Most of the junk food is pre-prepared and preserved with preservative. Preservative is toxin that could be cause cancer. Therefore to maintain a healthy life we need to eat more vegetables food and reject junk and canned food.

Key words: *Food habit; Cancer; Junk food; Preservative.*

*Corresponding author

Email: biswajit.4.biology@gmail.com

SPACE FOOD AND NUTRITION

Sunita Bera, Susmita Patra

Dept. of Nutrition and Dietetics, Midnapore City College, Midnapore, West Bengal.

Abstract

Space food is a type of food product created and processed for consumption by astronauts in outer space. The physiological changes of astronauts stretches out spine, turns muscles into jelly, makes face puffy, thin-out bone density, vision problem, depress immune system, screws up sleep cycle, throws off co-ordination, exposes to dangerous cosmic radiation and makes nutrition a challenge. There are 8 types of space food – rehydratable food, thermostabilized food, intermediate moisture food, natural form food, irradiated food, frozen food, fresh food, refrigerated food. The space is light-weight because the water has been removed and the food has a longer shelf life and can be stored at room temperature. The rehydrate food could be squeezed out of the package into the astronaut's mouth, because the size of the opening, food particles size was limited. After the meal germicidal tablets were placed inside the empty package to inhibit microbial growth on any left-overs.

Key words: - Space food; Astronauts; IMF

Super Bug: Challenger of Oil Spills Pollution

Soumya Samal, Debadrita Mandal, Biswajit Das*

PG Department of Zoology, Midnapore City College, PaschimMedinipur, West Bengal.

Abstract

Oil spills were a serious challenge before super bug invention. Oil spills can occur by the release of petroleum by hydrocarbon of any form on the sea floor due to human activity. There have many largest oil spills cases like crude oil and refined fuel spills from tankership in Alaska, Gulf of Mexico and CastilloDebellver, Saldanha Bay of South Africa. Due to the oil spills the birds, sea mammals, and marine plants mostly affected. Also it affect the marine ecosystem and coastal areas. To solve this problem microbiologist genetically engineered a new species of *Pseudomonas* bacteria, because *Pseudomonas* species is more effective for oil degradation and it has the capability to engulf about the three fourth of the oil spills. So the oil eating superbug plays a vital role to prevent the pollution by oil spills.

Key words: *Oil spills; Pollution; Super bug; Oil eating*

*Corresponding author

Email: biswajit.4.biology@gmail.com

Fenugreek and its Health Benefits on Diabetic Patients

Supriya Bhowmick and Sudipta Pramanik

Dept of Nutrition & Dietetics, Midnapore City College

Abstract

Fenugreek (*Trigonella foenum-graecum*) is an annual, forage, dicotyledonous leguminous crop that is commonly used as spice and herb. It is found in the native region extending from Iran to Northern India, but now grown in China, North and East Africa, Ukraine and Greece. Fenugreek is an herb that is widely used in cooking and as a traditional medicine for diabetes in Asia. It has been shown to acutely lower postprandial glucose levels, but the long term effect on glycemia remains uncertain. Different studies shown on its hypoglycemic properties on the non- insulin dependent diabetes mellitus patients. According to earlier research works fenugreek seed powder reduced fasting blood sugar (FBS), post prandial blood sugar (PPBS) and HbA_{1c} levels in diabetic patients. Fenugreek is known to have anti diabetic, anti-oxidant, anti-neoplastic, gastroprotective, hypercholesterolaemic properties due to rich composition of phytochemicals.

Key words: *Diabetes mellitus type II; Fenugreek; HbA_{1c}.*

Traditional ethnic fermented food and beverages in India

Surajit Karak, Haimanty Panja, Nabaranjan Giri

Dept of Nutrition & Dietetics, Midnapore City College, West Midnapore , West Bengal

Abstract

A significant diversity is noted on traditional ethnic fermented food and beverages in India. More than 1000 types of major and minor ethnic fermented foods and beverages are produced naturally and by adding starter cultures. Fermented food products categorised based upon their base material. Some fermented food such as dahi, iromba, fermented rai, kanjika and handua were reported to have significant medicinal properties. Diversity of microorganisms that induce fermentation ranges from mycelia fungi, enzyme and alcohol producing yeasts, Gram positive and few Gram negative bacteria with several functional properties. Functional microorganisms play important roles in the traditional fermentation processes by enhancing several health benefits to us. Microbial diversity to ethnic fermented foods contributes significant genetic resources due to diverse food cultures of multiethnic groups of people in India. It has been noticed that the consumption of few uncommon ethnic foods is declined in many states due to different lifestyle, food-habits and climate change in some places.

Key words: *Ethnic fermented food; Microorganisms; Health benefits*

The Anti-ageing Efficacy of Antioxidant

Tridip Kumar Das¹, Pradip Manna¹, Asim Kumar Manna¹

Dept. of Nutrition & Dietetics, Midnapore City College, Katuria, Bhadutala,
Midnapore, Paschim Medinipur

Abstract

Ageing is a biological process when all organisms are increased susceptibility and forward to older. In a normal situation, a balanced-equilibrium exists among oxidants, antioxidants and bio molecules. Excess generation of free radicals may overwhelm natural cellular antioxidant defences leading to oxidation and further contributing to cellular functional impairment. The identification of free radical reactions as promoters of the aging process implies that interventions aimed at limiting or inhibiting them should be able to reduce the rate of formation of aging changes with a consequent reduction of the aging rate and disease pathogenesis. It is also an irreversible occurrence where cell division and replacement of damaged cells have to go slow caused by the free radicals that the body constantly produces through the different kinds of metabolism in our body. But this ageing brings some changes in all people. These changes are continuous throughout the life, from losing baby teeth to the loss of taste buds. Also some biological (structural, sensory, system etc) psychological (memory, adaptation, intelligence etc) and sociological changes have occurred. These changes vary in degree and rate from individual to individual. Aging is associated with various pathological conditions like – CVD, Neurodegenerative disease, Alzheimer's, oxidative stress etc. Antioxidants are substances, which inhibit or delay oxidation of a substrate while present in minute amounts. Endogenous antioxidant defences are both non-enzymatic (eg, uric acid, glutathione, bilirubin, thiols, albumin, and nutritional factors, including vitamins and phenols) and enzymatic (eg, the superoxide dismutases, the glutathione peroxidases [GSHPx], and catalase). Even then nutrition lifestyle and other factors also determine how healthy the ageing process can be. Antioxidants' antiaging benefit is due to their anti-inflammatory effect, delay or prevention of cancer, diabetes, and brain disorders. Antioxidants also have the potential to lower blood pressure and reduce development of atherosclerosis. Antioxidant rich foods are also suggested for diabetic patients to help relieve the oxidative stress caused by increased free-radicals synthesis.

Keywords: *Ageing; Antioxidant; Free radicals; CVD; Cancer; Diabetes*

Organic foods Vs Conventional foods

¹Soumita Roy and ¹Sukanya Adhya

Dept. of Nutrition, Raja N L Khan Women's College, Midnapore, West Bengal, India

Abstract

Organic food products has been rising steadily over the recent years to a large extent, by claims that these are healthier or more nutritious than those grown by conventional farming methods, but the majority of people still tend to choose conventional over organic foods. Some are discouraged by higher costs of organic food, while the others are sceptical about organic being truly organic. However, organic food is not that expensive as many people erroneously think. Some organic fruit and vegetables are transformed into supplements which can be taken daily and freeze dried to maintain nutritional content.

The main difference between organic and conventional food products are the chemicals involved during production and processing. The conventional food production practices involve the use of a number of chemicals which have a devastating effect on the environment, while the residues of these chemicals in food products have dubious effects on human health. All food products on the market including those that contain residues of pesticides, antibiotics, growth hormones and other types of chemicals that are used during production and processing are known to be safe. Some national health organizations recommend choosing organic food products for children because they are more vulnerable to the effects of pesticides than the adults.

Organic food eliminates the risk of chemical residues but this is not its main advantage over conventional products. Avoidance of all chemicals in production of organic food much more environmentally friendly because the use of all natural production methods eliminates the risk of soil and underwater contamination, and helps preserve biodiversity and wildlife both of which have been seriously affected by the human actions, primarily urbanization and intensive agriculture. Organic farming also improves animal welfare because organic farms are required to keep their animals in certain environment and provide them access to sunlight and outdoors, for instance. In the end, organic food helps reduce the carbon dioxide emissions.

Key words: *Organic food; Conventional farming; Antibiotics; Environment; Human health; Biodiversity.*

Comparison of Health Status Between Slum and Urban Areas Housewife.

Rasmani Dinda¹ and Moumita Samanta²

1B.Sc. (Hons) 3rd year student, 2Guest lecturer

Department of Nutrition, Mugberia Gangadhar Mahavidyalaya

(UGC recognized Center with Potential for Excellence; Affiliated to Vidyasagar University),

Bhupatinagar, Purba Medinipur, Pin-721425,

West Bengal

E-mail: 89samantanut@gmail.com

In family needs in everyday life; housekeeping and maintaining the home; and making clothes for the family- and who is not employed outside the home. A housewife may also be called a stay-at-home mother or "SAHM". In the present study a survey was conducted to compare health status between slum and urban areas housewife. The survey was carried out at Bhagwanpur-II block area, Purba Medinipur, West Bengal. The data was collected for slum areas housewife (n=15) and for urban areas housewife (n=15). A housewife is a woman whose occupation is running or managing her family's home caring for her children; buying, cooking, and storing food for the family. The survey was found that different measurements like height, weight, blood pressure, pulse rate, waist and hip circumferences, body fat (from biceps, triceps by measuring skin fold thickness) were carried out. The participants were asked about their hygienic condition and diseases. It was found that there was no significant ($p>0.05$) differences in body mass index, systolic pressure, diastolic pressure, pulse pressure, pulse rate, triceps and biceps between slum and urban areas housewife. But it has noticed that waist hip ratio are significantly ($p<0.05$) lower in urban areas as compare to slum areas housewife. It was observed that more percentage of slum areas housewife were suffering from anemia, constipation, rashes, and peptic ulcer as compare to urban areas housewife. It was found that more percentage of urban areas housewife were hygienic is proper maintain from washing of hands after toilet and washing of cooking utensils compare to slum areas housewife.

Keywords: Slum areas housewife; Urban areas housewife; Health; Comparison; Body mass index; Waist-hip ratio.

Beneficial effect of Tea

Puja Dutta, Ishita Bhattacharyya, Barna Mukherjee, Bristi Patra

Bankura Christian College, Bankura, West Bengal, 722101

Corrospoding e mail :-barnamukherjee6@gmail.com

Abstract

Tea is an aromatic beverage which is very much popular drink among people. There are different kind of beverage among them tea is the second most consumed drink in the World. Varieties of tea are available throughout the World such as Darjeeling tea, peppermint tea, oolong tea, green tea, black tea etc. This study aims to explore the properties and components of tea and its health benefits. The natural components (such as flavonoids, phytochemicals, polyphenols, antioxidant) having beneficial properties such as antifungal, antiviral, antiaging, anticancer and this components are also useful in prevention of different non communicable diseases like obesity, stress induced diseases, liver disease, diabetes. In this topic we review various natural components of tea that are potentially beneficial to our health.

Key Words- *Tea; Natural compounds; Health benefit.*

Efficacy of RUTF for Severe acute malnutrition (SAM) children

Nibedita Pramanik

Department of Clinical Nutrition & Dietetics, Vidyasagar University,
Midnapore, Paschim Medinipur,

Abstract

Severe acute malnutrition (SAM) in children is a significant public health problem in India with associated increased morbidity and mortality. Approximately 8.1 million children under the age of 5 years (6.4%) suffer from severe acute malnutrition (SAM) and it is one of the important co-morbidities leading to hospital admissions in our country. 'Therapeutic food' in general, is any appropriate food product or products, enhanced nutritionally, and thus made to be more energy-dense and more nutrient-dense. When needed, usually in emergency situations, it should be used in effect as medicine, in conjunction with necessary therapy, for as short a time as possible. 'Ready-to-use therapeutic food' (RUTF), the subject of this commentary, is a specific type of therapeutic food, now almost always in the form of commercial products, which in the last several years has leapt onto the nutrition scene. It has some special benefits. It is creating new opportunities, new challenges and, in our judgement, an increasing number of new problems. 'Nutrimix' (Child In Need Institute) and other traditional home made energy dense food can fulfil most of the requisite criteria of 'RUTF' by adding 'mineral electrolyte solution' (WHO) and vitamin supplements. Also, indigenously prepared 'RUTF' should be preferred for home/community based management of severe acute malnutrition. It is a traditional home made food, is energy dense and could be made more energy dense and palatable by adding more oil, sugar and seasonal ripe fruits like banana, mango and others. This can be fed to other children at home thereby preventing malnutrition occurring in them and at the same time bring in positive behaviour change in feeding.

Key words: *RUTF; SAM; Nutrimix.*

Health Benefit and Nutritional Value of Single Cell Protein

Suvankar Sen, Subhasis Kr. Karak, Goutam Jana and Shilpa Dinda

Department of Botany, Midnapore City College, Kuturia, Bhadulata, Midnapore, Paschim Medinipur

Email- suvankarsen95@gmail.com, suvokarak@gmail.com

Abstract

The increasing world deficiency is becoming a major problem for human kind. India a developed nation, it's major population is facing nutrition deficiency and food scarcity problems. Single cell protein refers to edible unicellular microorganisms. The biomass or protein extract from pure or mixed cultures of algae, yeast, fungi or bacteria. The nutritional value dependent on the amino acid composition must be high. SCP protein use as a good food, has following advantages of high protein carbohydrate and vitamin.

Key words: *Single Cell Protein; Health benefit; Nutritional value; Advantages and disadvantages.*

Tea Tree (*Melaleuca alternifolia*, Myrtales: Myrtaceae) Oil: a New Tropical Dermatological Medicines

Madhumita Pal and Pooja Rani Maity

Department of Nutrition & Dietetics, Midnapore City College, Kuturiya, Bhadutala, Dist-Paschim Medinipur, West Bengal. India.

Abstract

Background and objectives: Tea tree (*Melaleuca alternifolia*, Myrtales: Myrtaceae) oil (TTO) is an essential oil. It has a minimum content of terpinen-4-ol and a maximum content of 1, 8-cineole. Terpinen-4-ol is a major TTO component which exhibits strong antimicrobial and anti-inflammatory properties. Tea tree oil exerts antioxidant activity and has been reported to have broad-spectrum antimicrobial activity against bacterial, viral, fungal, and protozoal infections affecting skin and mucosa. Use of TTO in clinical practice and opened the door to novel agents in dermatology. Several studies have suggested the uses of TTO for the treatment of acne vulgaris, seborrheic dermatitis, and chronic gingivitis. It also accelerates the wound healing process and exhibits anti-skin cancer activity. It is notable that terpinen-4-ol is able to reduce the production of tumor necrosis factor (TNF), interleukin-1 (IL-1), IL-8, IL-10, and prostaglandin E2. In addition, the water-soluble fractions of TTO, terpinen-4-ol and α -terpineol, suppress superoxide production by monocytes but not by neutrophils of oxygen species. Additionally, terpinen-4-ol, but not 1,8-cineole or α -terpineol, modulates vasodilation and plasma extravasations.

Conclusions: In conditions for which TTO treatment is of benefit necessary to establish guidelines for its application, preparations, and therapeutic indices it opens up new horizons for dermatologists in the use of this herbal agent.

Key Words: *Tea tree oil; Seborrheic dermatitis; Terpinen-4-ol; Vasodilation.*

Biodegradable Polymer and their practical utility

Asima Dhal

Dept. Of Chemistry, S B S S Mahavidyalaya, Goaltore, West Bengal, India
E Mail- dhalasima83@gmail.com

Abstract

Bio-based and biodegradable products have raised great interest because of their vast applications in the recent years, mainly Agricultural, Medical and Packeging applications. The main reason for their lowest market application is their cost . The bio degradable polymers bring a significant contribution to the sustainable development policies also because of the wider range of disposal options with minor environmental impact. Environmental concerns and finite petroleum resources are two major reasons for increasing amount of attention over the last two decades. We can obtain biodegradable plastics from synthetic as well as natural polymers. From renewable sources, natural polymers (starch, cellulose and proteins) are available in large quantity whereas synthetic polymers (PGA, PCL etc.) are produced from non renewable petroleum resources.

Role of Monoamine Oxidase Inhibitors in Human Disease

Indrajit Dalai 1, Debabrata Giri 2, Prasanta Barman³ and Moumita Samanta⁴

1,2,3B.Sc. (Hons) 3rd year student, 4Guest lecturer

Department of Nutrition, Mugberia Gangadhar Mahavidyalaya (UGC recognized Center with Potential for Excellence; Affiliated to Vidyasagar University),
Bhupatinagar, Purba Medinipur, Pin-721425, West Bengal
E-mail: 89samantanut@gmail.com

Abstract

L-Monoamine oxidases (MAO) are a family of enzymes that catalyze the oxidation of monoamines. They are found bound to the outer membrane of mitochondria in most cell types in the body. Members of the monoamine oxidase family of flavoproteins catalyze the oxidation of primary and secondary amines, polyamines, amino acids, and methylated lysine side chains in proteins. The enzyme was originally discovered by Mary Bernheim in the liver and was named tyramine oxidase. It is a flavoenzyme which degrades amine neurotransmitters, such as dopamine, norepinephrine, and serotonin, via oxidative deamination.

Monoamine oxidase inhibitors (MAOIs) are a class of drugs that inhibit the activity of one or both monoamine oxidase enzymes: monoamine oxidase A (MAO-A) and monoamine oxidase B (MAO-B). Monoamine oxidase (MAO) is an important enzyme to metabolize in vivo endogenous and diet-derived biogenic amines via oxidative deamination. They belong to the protein family of flavin-containing amine oxidoreductases. MAO-A is a key regulator for normal brain function. Major substrates are noradrenaline, adrenaline, dopamine, ?-phenylethylamine (PEA) and serotonin. These substrates are underlying in the biochemical pathology of "depression" and Parkinson's disease (PD). The deficiency of serotonin, noradrenaline and dopamine builds-up the hypothesis of "depression" while a loss of dopamine, noradrenaline and serotonin is the biochemical basis of degenerative processes underlying PD. Monoamine Oxidase Inhibitors effective for major depression, panic disorder, social phobia. They are particularly effective in treating atypical depression.

Keywords: Flavoproteins; Neurotransmitters; Serotonin; Noradrenaline; Depression; Parkinson's disease.

Molecular and Biotechnological advances in Milk Whey Protein in Relation to Human Health

Malay Maji

Steel City College of Education, Gandhi more, Durgapur, Burdwan

E-mail: malaymaji051992@gmail.com

Abstract

Milk and colostrum is a rich source of proteins/peptides which have crucial roles in both neonates and adults. Milk whey proteins and peptides are potential health-enhancing nutraceuticals. Many bioactive peptides/proteins may be used as nutraceuticals. The following components of milk are of particular interest in the recent years: 1) Lactoferrin [Lf] has antibacterial, antifungal, antiviral, antiparasite and antitumor activities and accelerates immunomodulatory properties. Lf is a potent inhibitor for several enveloped and naked viruses, such as rotavirus, enterovirus and adenovirus. Lf is resistant to tryptic digestion and breast-fed infants excrete high levels of faecal Lf, so that its effect on viruses replicating in the gastrointestinal tract is of great interest. 2) Casein has been protective in experimental bacteremia by eliciting myelopoiesis. Casein hydrolyzates were also protective in diabetic animals, reduced the tumor growth and diminished colicky symptoms in infants. 3) A Proline rich polypeptide [PRP] revealed variety of immunotropic functions, including promotion of Tcell activation and inhibition of autoimmune disorders such as multiple sclerosis. 4) α -Lactalbumin [LA] demonstrates antiviral, antitumor and anti-stress properties. 5) Lactoperoxidase shows antibacterial properties. 6) Lysozyme is effective in treatment of periodontitis and prevention of tooth decay. Taken together, milk-derived proteins and peptides are bio-available and safe for the prevention and treatment of various disorders in humans and may play a complementary rather than a substitution.

Keywords: *Whey protein; Human Health; Nutraceuticals; Lactoferrin.*

Herbs Plays an Important Role in the Field of Cosmetics

Sathi Pan, Aniket Bhunia, Joyjit Giri, Hosne Chaman, Biswajit Dev

(B.Sc. 2nd Semester) Sukumar Sengupta Mahavidyalaya, Keshpur.

Email: mandiradinda.1988@gmail.com

Abstract

Background: The concept of beauty and cosmetics is as ancient as mankind and civilization. Women are obsessed with looking beautiful. So, they use various beauty products that have herbs to look charming and young. Herbal Cosmetics, referred as any substance or products are formulated using various permissible cosmetic ingredients intended to be placed in contact with the various external parts of the human body to provide defined cosmetic benefits only. Indian herbs and its significance are popular worldwide which have been used in maintaining and enhancing human beauty. Herbal products is environmental friendly and have renewable source for sustainable supplies of cheaper medicines for the world growing population. Prolong and apparently use of herbal medicines may offer testimony of their safety and efficacy.

Objectives: The purpose of review study has to identify many plants used by the people to cure dermatological disorders and as cosmetics used.

Methods: The systematic database search for published research articles including online libraries of Google Scholar and Medline articles and several books in context of medicinal plants to be used as a cosmetics and dermatological benefits.

Results: Results reported in the articles reveals that there is a significance of different medicinal plants for anti-ageing treatment, improving facial complexion. Henna, Reetha powder, Shikaka has a natural affinity with the proteins in our hair, making it able to “stain” the color and make hair shiny. Several studies has reported that variety of medicinal plant (Neem, Aloe Vera, Tulsi, Turmeric etc.) can be used as a Skin infection, Immunity booster, Anti-obesity, Blood purifier for beautiful and Anti diabetic.

Conclusion: The knowledge of medicinal plants used by the people of seems to be well known to its culture and tradition. Some of the plants were found to have dual use, both as curative and cosmetic.

Keywords: *Herbs; Natural Cosmetic; Reetha powder; Medicinal plants; Skin; Hair.*

Effect of Sugar Replacement with Sucralose on the Quality of Shrikhand

Buddhadev Maity¹ and Apurba Giri^{2*}

¹B.Sc. student, Dept. of Nutrition, Mugberia Gangadhar Mahavidyalaya,
Bhupatinagar, Purba Medinipur

²Assistant Professor & Head, Dept. of Nutrition, Mugberia Gangadhar Mahavidyalaya, Bhupatinagar, Purba
Medinipur, West Bengal, Pin – 721425

Tel.: +91-9564289290, E-mail: apurbandri@gmail.com

* Corresponding author

Abstract

Our traditional Indian sweets contain lot of sucrose. So, diabetic persons cannot eat these products though they wish to consume. Shrikhand is an indigenous sweetened fermented milk product and regularly consumed in Gujarat, Maharashtra and certain parts of Karnataka, Madhya Pradesh and Rajasthan. It contains too much sucrose (50-75%). Sucralose is an artificial sweetener which is about 320 to 1,000 times sweeter than sucrose. In the present study an attempt was taken by replacing the sucrose of Shrikhand with sucralose and prepared diabetic Shikhand (n=3) was compared with control (sucrose added Shrikhand, n=3). To prepare both the Shrikhands, Dahi (Amul brand) was hanged in a muslin cloth for 4 h inside refrigerator (4°C). Then the obtained Chakka was mixed with sucralose (50% of Chakka, w/w) for control and for diabetic Shrikhand sucralose (7.27% of Chakka, w/w). Finally in both the batch cardamom (0.02% of Chakka, w/w) was mixed thoroughly. The prepared two types of Shrikhand were evaluated by five sensory panellists. The results were analysed with unpaired *t*-test. It was found that the colour and appearance and flavour of control Srikhand was significantly ($P<0.05$) higher as compare to diabetic Shrikhnad, whereas they did not notice any significant ($P>0.05$) differences in body and texture and overall acceptability. The sensory panellists opined that the diabetic Shrikhand was as par with the control. So, the diabetic person may consume this developed diabetic Shrikhand.

Keywords: *Shrikhand; Dahi; Sensory; Diabetes; Sucrose; Sucralose.*

Comparison of Health Status Between Shopkeepers and Service Holders

Srikrishna Jana¹, Chandan Khanra² and Apurba Giri^{3*}

¹B.Sc. student, Dept. of Nutrition, Mugberia Gangadhar Mahavidyalaya,
Bhupatinagar, Purba Medinipur

²Guest Lecturer, Dept. of Nutrition, Mugberia Gangadhar Mahavidyalaya,
Bhupatinagar, Purba Medinipur

³Assistant Professor & Head, Dept. of Nutrition, Mugberia Gangadhar Mahavidyalaya, Bhupatinagar, Purba
Medinipur, West Bengal, Pin – 721425,

Tel.: +91-9564289290, E-mail: apurbandri@gmail.com

* Corresponding author

Abstract

Life style of a person affects his/her health. In the present study a survey was conducted to compare health status between shopkeepers and service holders. The survey was carried out at Contai Municipality, Purba Medinipur, West Bengal. The data was collected for shopkeepers (n=15) from cloth shop, shoes shop, book shop, stationary shop, grocery shop and rice shop and for service holder (n=15) from high school teachers. Different measurements like height, weight, blood pressure, pulse rate, waist and hip circumferences, body fat (from biceps, triceps, subscapular, suprailiac by measuring skinfold thickness) were carried out. The participants were asked about their total working time and diseases. It was found that there was no significant ($p>0.05$) differences in body mass index, waist-hip ratio, pulse rate, systolic pressure, diastolic pressure, pulse pressure and mean pressure between shopkeepers and service holders. But it has noticed that the skinfold thicknesses (triceps, subscapular, suprailiac) were significantly ($p<0.05$) lower in shopkeepers as compare to service holders, whereas total working time of shopkeepers were significantly ($p<0.05$) higher as compare to service holder. It was observed that more percentage of shopkeepers were suffering from acidity, headache, fatigue and flatulence as compare to service holder whereas, more percentage of service holder were suffering from allergy, obesity, diabetes, high blood pressure and joint pain as compare to shopkeeper.

Keywords: *Shopkeeper; Service holder; Health; Comparison; Body mass index; Waist-hip ratio*

Comparison Between *Channa* Prepared with Citric Acid and Lactic Acid

Ashis Bera¹ and Apurba Giri^{2*}

¹B.Sc. student, Dept. of Nutrition, Mugberia Gangadhar Mahavidyalaya,
Bhupatinagar, Purba Medinipur, West Bengal, Pin – 721425

²Assistant Professor & Head, Dept. of Nutrition, Mugberia Gangadhar Mahavidyalaya, Bhupatinagar, Purba
Medinipur, West Bengal, Pin – 721425,

Tel.: +91-9564289290, E-mail: apurbandri@gmail.com

* Corresponding author

Abstract

Channa based sweet is an essential part of Bengali culture. Beside the traditional Channa based sweets, the halwais are trying to apply their innovative skills to develop different new Channa based sweets. Channa is the main ingredient of Channa based sweet. Generally this Channa is made by coagulating the milk with citric acid. But milk may be coagulated by lactic acid also. To compare the Channa prepared with citric acid and lactic acid, in the present study an attempt was taken to coagulate milk with citric acid and lactic acid separately. To prepare both type of Channa, 500 ml milk (Fat 3%, Solid not fat – 8.5%) was heated to 90°C and cooled to 70°C. Then for one batch citric acid (2%, w/v) was added and for other batch Dahi (1% acidity, Dahi contains lactic acid) was directly added to milk until coagulation. Then coagulated masses of both the batches were strained with muslin cloth and hanged for 15 min to drain the whey and Channa was prepared. The prepared (n=3) two types of Channa were evaluated by five sensory panellists. The results were analysed with unpaired *t*-test. There was no significant ($P>0.05$) difference in titratable acidity. However, moisture percentage of Channa prepared with citric acid was significantly ($P<0.05$) higher than prepared with lactic acid. The sensory panellists did not noticed any significant ($P>0.05$) differences in different sensory characteristics (colour & appearance, flavour, body & texture, over all acceptability). So, this lactic acid coagulated Channa may be used for preparation of Channa based sweets.

Keywords: *Channa; Dahi; Citric acid; Coagulation; Sensory; Moisture.*

Don't Take Lights Lightly

Sayan Jyoti Bera¹, Soumyadip Ghosh¹

¹PG Student, Department of Physiology, Midnapore College (Autonomous)
MIDNAPORE COLLEGE, West Bengal, Pin- 721101,
Email: sayanjyotibera@gmail.com

Abstract

Light is an electro-magnetic radiation, the portion of which responsible for sense of sight in human and other animals is called visible spectrum (400 to 700 nm). Lights with inadequate amount of intensity and wavelength harm not only eyes but also other parts of human body. In modern era of digitalization we are surrounded by several digital screens (TV, LAPTOP, MOBILE etc.) which are made of LED (Light Emitting Diodes) that reflects blue-violet (380 to 500 nm) light. This low wavelength of high intensity light causes age related Macular Degeneration, retinal stress and toxicity by producing reactive oxygen species and damaging mitochondrial DNA of retinal pigment epithelium cells. Long exposure to such light increases the chance of developing glaucoma, cataract and other retinal degeneration of human eye. In daylight blue-violet spectrum present in sunlight is very helpful to regulate our biological clock, boosts attention and mood. But the massive use of led lights and electronic gadgets by youth as well as adults during night excite Suprachiasmatic Nuclei which reduce melatonin secretion and disrupt circadian rhythm of alertness and sleepiness and develop insomnia, migraine, memory loss. SCN also alters secretion of cortisol which causes abnormal blood pressure, diabetes and obesity. To overcome this we should reduce the using electromagnetic gadgets especially in night. Alternatives of LED such as warm white tubes, halogen lights, should be used. The minimum distance of 16 inches from eye to digital screens should be maintained along with the Special LED protection screen and eyewear.

Keywords: *LED; Blue-Violet; Macular Degeneration; Circadian Rhythm; Insomnia; Glaucoma; Diabetes; Obesity.*

Dengue: The Prevalent Human Virus Disease

Debojyoti Das, Rinti Rana, Sangita Maiti Dutta*

PG Department of Zoology, Midnapore City College,
Paschim Mednipur, West Bengal.

Abstract

Background: Dengue fever is a mosquito-borne disease caused by the dengue virus and spread by *Aedes aegypti*. It is transmitted via blood transfusion and through organ donation. Population growth, rapid urbanization, increase in international travel from endemic areas and global warming are playing a major role in disease spread.

Objectives: Our objective is to evaluate the causes, features pathogenecity and modern treatment of dengue fever.

Methods: After three to fourteen days of infection when virus enters white blood cells and start reproduction then symptoms begin. Dengue fever virus (DENV), an RNA virus codes for the three different types of protein molecules. Those helps in the formation of structure and functions in host body. A number of signalling proteins like cytokines and are produced.

Results: These are responsible for many of the symptoms like high fever, headache, vomiting, muscle and joint pains and skin rash. A number of tests are available to confirm the diagnosis including detecting antibodies to the virus or its RNA. Platelet count, prothrombin time, thrombin time and liver function tests, haematocrit tests are commonly recommended for patients. Treatment of acute dengue is supportive and includes giving fluid either by mouth or intravenously for mild or moderate disease. For more severe cases blood transfusion may be required. For controlling fever and pain paracetamol is generally recommended.

Conclusion: A novel vaccine for dengue fever, Denvaxia has been approved by WHO and commercially available in several countries. However this may increase the risk of dengue fever because of the phenomenon of antibody-dependent enhancement. Prevention is by proper environmental management i.e. reducing mosquito habitat and by personal protection i.e. using mosquito net while sleeping and limiting exposure to mosquito bites.

Key words: Dengue; Mosquito; Virus; Fever; Paracetamol; Vaccine

* Corresponding author Email: smaitidutta@gmail.com

Biomedical Importance of Gila Monster Venom

Rohan Khan¹ and Subho Ghosh^{2*}

¹UG Honours student

²Assistant Professor of Zoology, UG and PG Department of Zoology
Midnapore College (Autonomous), Midnapore-721101, Dist. Paschim Midnapore, W.B

*Corresponding author(E-mail: subho26@rediffmail.com)

Abstract

Among vertebrates, the class Reptilia accures a significant place for some of their distinctive features. One of them is production of poison or venom. One prominent example is the lizard known as Gila monster (*Heloderma suspectum*). Found in United States and North-West Mexican states of Sonora these bright coloured lizards spend most of their time in cool places and sometimes underground. They spend almost 95% of their lifetime in laziness and only take meals during late summers or falls. But when it comes to their mode of protection they often bite their opponents and does not tend to leave the space where they bite. These lizards have glands(that secretes poison) which are located on both sides of their lower jaw. The poison is transferred through grooves along with their saliva.

Modern researchers claim that the poison of Gila Monster is basically a mild neurotoxic one. Due to its impact, the victims primarily suffers from extreme pain, weakness, faintness, excessive perspiration, chills and fevers and sometimes breathing difficulties. But it is not fatal. Modern research shows the venom contains exendin-4. This exendin-4 is a natural protein which was later commercialy synthesized as exendinate. Exendinate has various medicinal values. It can reduce liver fat. Its action on human pancreas facilitates glucose control of different types. Exendinate can be used for the treatment of obesity. This compound also plays prominent roles in treatment of thyroidal cancer, Alzheimers's disease, hypoglycaemia etc.

Keywords: *Gila Monster; Exendinate; Venom; Exendin-4.*

A new Process of Nutrition Education

Sukanchan Tripathy¹ and Moumita Samanta²

¹B.Sc. (Hons) 3rd year student, Department of Nutrition, Bajkul Milani Mahavidyalaya,
Kismat Bjkul, Purba Medinipur, Pin-721655

²Guest lecturer, Department of Nutrition, Mugberia Gangadhar Mahavidyalaya
(UGC recognized Center with Potential for Excellence; Affiliated to Vidyasagar University) Bhupatinagar, Purba
Medinipur,
Pin-721425, West Bengal, E-mail: 89samantanut@gmail.com

Abstract

Education can be defined as the process of importing or acquiring knowledge and habits through the durable changes in the behavior of human beings. Meaning of nutrition education is the outcome of the knowledge about nutrition. The nutrition education can also be defined as the process of acquainting people with the value of resources already available to them and persuading them to change is practice. In other words educating for better nutrition and thus bringing the desirable positive changes in knowledge, attitudes and practice in order to enhance the nutritional status of the individual and community as a whole. Although poor economic condition does stand in the way of improved nutrition, but ignorance regarding nutrients needed by the body and cheap foods which can provide them and better utilization of the resources, are also partly responsible. It has been realized that the poverty of knowledge is one of the major causes for poor nutrition among many people in rural area in our country. For instances most mothers are not so poor as not be able to afford 50-100 gm of green leafy vegetables to child daily. Similarly many mothers of urban area will spend lot of money on commercial baby foods e.g. ferex, cerelac or Lactogen, milk care etc, but won't realize the dangers associated with bottle feeding and added cost due to expensive products. Nutrition education is of crucial importance as the problem of ignorance, ill- health and malnutrition go in hand. Therefore such education is probably greatest and most urgent for the proper vulnerable sections of the community.

Keywords: *Nutrition education; economic condition; Rural and urban area; commercial baby foods; vulnerable sections.*

Beneficial Effects of an Old Night Fermented Rice- Known as Panta Bhat

Sanchita Dey, Parthajit Majhi, Tanmoy Ghosh, Santanu Manna
(B.Sc. 2nd Semester) Sukumar Sengupta Mahavidyalaya, Keshpur.
Email: mandiradinda.1988@gmail.com

Abstract

Background: Fermented rice, popularly known as 'panta bhat' in Bengali culture, has many nutritional value and huge health benefits. In the past, fermented rice was popular in breakfast instead of hot breakfast. It is considered to be a coolant during summer, traditionally people living in rural area consumed it before going to work in the hot summer days. Usually rice is cooked in the afternoon and cools down. Then, it is soaked fully in water and stored in clay pot under regular room temperature overnight. The rice would ferment by the next morning. It is consumed with salt, red chili fry or green chili and onion in the morning. It is popular in Bangladesh and east and south India.

Objectives: The purpose of review study has to identify nutritional value and health benefits of old night fermented rice.

Methods: The systematic database search for published research articles including online libraries of Google Scholar and Medline articles in context of nutritional property of fermented rice.

Results: Articles reveals that fermented rice is rich in vitamin B-16 and vitamin B-12 and many essential bacteria which helps digestion and prevents many diseases. This rice has the component to increase bone and muscle strength. About 100gm of cooked rice has only 3.4mg of iron, but same quantity of rice fermented the iron content went up to 73.91mg. Likewise, sodium, potassium and calcium are nutrient present in fermented rice. Another studies reported that Fermented rice makes body light and increases work power. It cures gastroenteritis and maintains heat balance, reduces constipation and maintains body freshness, blood pressure and mood of human.

Conclusion: Earlier, it was called as people's food and no nutrition value but the scientists discover that it has many nutritional value and huge health benefits.

Keywords: *Fermented food; panta bhat; nutritional value; health benefits; lactic acid bacteria, muscle strength.*

Quality of Life of Menopausal Women

Mandira Dinda, Prof. Debidas Ghosh

(M. Phil. Student), Vidyasagar University

Department of Bio-medical Laboratory Science and Management, Vidyasagar University, Midnapore-
721102, West Bengal, India

Email: mandiradinda.1988@gmail.com

Abstract

Background: Menopause is a normal physiological process in all women's life, characterized by generally cessation of periods for longer than 12 months from last menstrual cycle. During menstrual periods, there is a great deal of hormonal imbalance especially estrogen and progesterone that leads to cause several menopausal symptoms like vasomotor, psychological, physical, sexual dysfunction etc. Literature further stated that during menopause different socio demographic characteristics of women like social lifestyle, smoking, drinking habit and economical status etc. may influence the eventual timing of the menopause transition and post-menopausal quality of life of women as well.

Objectives: The purpose of this review has to explore the menopausal symptoms including various factors related with menopause specific quality of life of menopausal women and also to know the strategies to improve the midlife transitional periods of the women.

Methodology: The systematic electronic as well as database search for published research articles including online libraries of Ovid PubMed, Google Scholar, Medline, UK Essays and Medscape articles in context of the menopause, perimenopause, menopause symptoms, midlife and quality of life has been studied. A total of 10 reports have been studied which met the inclusion criteria.

Results: Results reported in the articles reveals that there is a marked difference of menopausal symptoms on the women's life. It is further reported that women's between 45-55 years age has been significantly prevalent to menopausal symptoms including vasomotor, psychological, physical and sexual dysfunction and consequently reduced level of quality of life. A number of studies showed that there is a significant association between the variety of socio-demographic factors i.e. social lifestyle, smoking, drinking habit and economic status along with balanced BMI, education level etc.

Conclusion: Results suggested that there is lots of physiological change noted in menopausal women which further worsen in context of poor socio-demographic factors. Increase awareness among women's may be recommended to dilute the negative outcome of socio-demographic factors and menopausal complications.

Keywords: *Menopausal women; menopause, midlife; quality of life; vasomotor; socio-demographic factors,*

Evaluation of The Effects of Pesticide in Environmental Persepectives

Titli Mukherjee, Priyadarshini Das, Smita Das, Sangita Maiti Dutta*

PG Department of Zoology, Midnapore City College, Paschim Mednipur, West Bengal.

Abstract

Background: Pesticides are chemical substances that control or destroy pests. It can be classified according to target species (herbicides, insecticides, fungicides, rodenticides etc.), chemical structure (organic, inorganic, synthetic or biological) and physical state (gaseous, liquid, solid). Biological pesticides include microbial pesticides and plant or animal derived pesticides i.e. pyrethroids, nicotinoids, etc. Commonly used pesticides are atrazine, DDT, diazinon, melathion etc.

Objectives: Pesticides are intended to function as protectors of plant product from weeds and insects. Most of all save money of farmers by preventing crop loss and also protect us from different disease by controlling household pests.

Methods: Organophosphates decreases the function of acetylcholinesterase and organochlorine store in adipose tissue by bioaccumulation, causes high toxicity in body. They interfere with the function of different receptors of hormones like estrogens and androgen. Many of them stimulate aromatase activity which deactivates xenobiotics.

Result: Pesticides can cause acute and chronic health problems related to different types of cancer and other diseases like Alzheimer's, diabetes, asthma etc. Women exposed to pesticide in regular basis causes decreased fertility, spontaneous abortions, premature birth, low birth weight, developmental abnormalities and disruption of the hormonal function.

Conclusion: Adopting integrated pest management and avoiding chemical pesticides is one of the preventive methods to escape from different diseases. Organic farming is one of the best way to overcome from the disasters of pesticides. We should bye organic and locally grown fruits and vegetables with proper washing before eating. We should also use non-toxic methods for controlling insects in home and garden.

Key Words: *Pesticide; Disease, Hormone; Integrated Pest Management; Organic farming.*

*** Corresponding author**

Email: smaitidutta@gmail.com

Importance of Cord Blood

Priti Gorai, Arpita Ghatak, Somasree Mondal

Department of Nutrition Science, Bankura Sammilani College

Kenduadihi, Bankura 722102

Correspondence to: Priti Gorai

E-mail: mougurai777@gmail.com

Abstract

Umbilical cord blood is blood that remains in the placenta and in the attached umbilical cord (the part of the placenta that delivers nutrients to a foetus) after child birth. Cord blood contain blood-forming stem cells, red blood cells, white blood cells plasma, platelets which are potentially useful for treating diseases that require stem cell transplant (also called bone marrow transplant), such as certain kinds of leukemia or lymphoma, aplastic anaemia , severe sickle cell disease , severe combined immune deficiency . The major clinical use of cord blood has been for haematological malignancy in children. These cord blood stem cells have been proven helpful to replace damaged blood cells with healthy ones. The collection of cord blood procedure is totally safe. The first successful cord blood transplant was done in 1988 in a child with Fanconi Anaemia. By 2013, 30,000 Cord Blood Transplant had been performed and banks held about 600,000 units of cord blood.

Key words: *Cord blood; Stem cells; Anaemia; Bone marrow.*

Alcoholism – a Man Made Disease

Ankita Chail

Department of Nutrition Science, Bankura Sammilani College

Kenduadihi, Bankura 722102

Correspondence to: Ankita Chail; email - ankitachail27@gmail.com

Abstract

Alcoholism is a disease characterized by the habitual intake of alcohol. The definition of alcoholism is chronic alcohol use to the degree that it interferes with physical and mental health, or with normal social or work behavior. It is a disease that produces both physical and psychological addiction. Alcoholism or too much dependence on alcohol causes some short and long term effects. Short term symptoms include drowsiness, vomiting, slurred speech, stomach cramps, gastritis, headache, blurred vision, problems in maintaining coordination, blackouts, anaemia or loss of oxygen supply to the body. Long-term signs and symptoms include high blood pressure, stroke, liver diseases, sexual problems, brain damage, ulcerations in the stomach, cancer of the gut and throat. Alcohol is a central nervous system depressant that reduces anxiety, inhibition, and feelings of guilt. It lowers alertness and impairs perception, judgment, and motor coordination. In high doses, it can cause loss of consciousness and even death. Drinking during pregnancy can harm the baby. Alcohol also increases the risk of death from car crashes, injuries, homicide, and suicide. The treatment of alcoholism begins with detoxification programme for a period of four or seven days. Certain medications are prescribed to curb the withdrawal symptoms such as headache, sleeplessness, etc. Psychological counseling of the alcoholic person is very much useful. Psychotherapy can also help to treat the condition.

Keywords: *Alcoholism; Addiction; Physical and mental health; Psychotherapy.*

Causes and Effects of Fluorosis

Sumedha Roy, Rohan Khan , Arunav Mukherjee

Department of Nutrition Science, Bankura Sammilani College

Kenduadihi, Bankura 722102

Correspondence to: Sumedha Roy; sumedha1998@gmail.com

Abstract

Fluorosis is an eminent problem in the Rural India. It is a non-genetical, crippling disease caused by high doses of fluoride intake through our daily activities. Depending upon the severity of the disease fluorosis is of two types dental fluorosis and skeletal fluorosis. Both of them are detrimental for the human health and pose health hazards and can even cause permanent deformities. The percentage of skeletal fluorosis is far higher than non skeletal one. But skeletal fluorosis is visible, so it can be easily tackled when initial symptoms appear.

Fluorosis is mainly caused by food habits and to some extent by bad habits and social norms in various occasions. Food items like salts with high fluoride content, masalas with black salt or preparations using black salt, liquor tea, etc. increase the incidence of fluorosis. Social norms like consuming tea without milk, use of black salt in several ceremonies, children not consuming green leafy vegetables, etc. also pose as a factor in increasing fluorosis.

Fluorosis is a non-curable but preventable disease. Fluorosis incidence needs to be controlled through awareness and for that reviewing the food items and norms which induce fluorosis. It can be prevented or minimized by using alternative water sources, by removing excessive fluoride from drinking water, and by improving the nutritional status of populations at risk.

Key words: *Rural India; Health hazard; Human health; Nutritional status; Social norms.*

Golden Rice: Effectiveness and Safety

Shreya Dutta, Disharee Patsa, Anasua Midya

Department of Nutrition Science, Bankura Sammilani College

Kenduadihi, Bankura 722102

Correspondence to: Disharee Patsa,

E-mail: malay.patsa@gmail.com

Abstract

Golden rice is genetically modified rice fortified with β -carotene, or provitamin A. European scientists developed the first strain of Golden Rice towards the end of the 1990s.

Golden rice differs from standard rice in that it contains extra genes. These were added through genetic modification and ensure the production of provitamin A in the rice grains. Provitamin A colors the grains yellow-orange, hence the name 'Golden Rice'. Once absorbed into the body, pro-vitamin A is converted into vitamin A.

Golden rice was developed to prevent vitamin-A deficiency (VAD) in developing countries. It contains 1.6-35 μg of β -carotene per gram of dry rice. Golden rice, bio-fortified with β -carotene, is intended to supply the required vitamin A dose to prevent blindness in malnourished population. The advantage of it is that there is no toxicity developed due to excess consumption. Though there is debate about the safety aspect of genetically modified crops, in the human study no side effects or abnormalities were observed in different study.

Golden rice is still in the process of development. Golden rice is not meant to eradicate the problem of vitamin A deficiency but only to ameliorate it. But, for as long as vitamin A deficiency remains a public health problem in several countries, Golden rice can be of added value.

Keywords: *Golden rice; Effectiveness; Safety; Genetically modified*

Health Benefits of Ice

Avik Bandyopadhyay, Sanchita Chowdhury, Tirna Karmakar

Department of Nutrition Science, Bankura Sammilani College

Kenduadihi, Bankura 722102

Correspondence to: Avik Bandyopadhyay,

E-mail: avik240198@gmail.com

Abstract

The solidified state of water is called ice. Ice is one of the useful as well as beneficial things in our daily life. Ice is safer than normal water because it is free from thermophiles bacteria. In sunburn application of few ice cubes not only soothes the affected area but also hydrates the skin. This is because ice contains water that when applied on the skin eases pain and inflammation. Ice cube is found as a compound of health therapy to sanity digestive system. The therapy is applied to use ice cube to relieve the pain that occurred frequently in stomach. Nowadays, tired eyes are one of the most health problems suffered by citizen. This condition can be solved by the usage of ice cube. Eating ice cube is also found to maximize blood circulation in face. When blood circulates well on face, then it will prevent premature aging maximally. Furthermore, it is known to keep the heart healthy. Be it muscle cramps or pain due to injection shot, applying ice-packs on the site reduces pain and discomfort. It helps in countering pain by soothing the inflammation and improving blood circulation in the area. Ice helps in burn calories or reduces belly fat. Jumping into a cold shower, body instantly works to get it back up to its normal temperature – as it does this, metabolism can increase by up to 550% of its resting level, burning calories in the process. There are so many health benefits of ice in glowing skin, acne and wrinkles and also smooth hair.

Key words: *Ice; Thermophiles bacteria; Sunburn; Aging; Blood circulation.*

Translation of Nutrigenomics into Nutrition Practice

Dibya Pal, Alpana Maji, Sk Wasef Ali

Department of Clinical Nutrition and Dietetics, Vidyasagar University

Paschim Medinipur-721102

Correspondence to Dibya Pal,

E-mail- divya.pal944@gmail.com

Abstract

Genetics is an important piece of every individual health puzzle. The completion of the Human Genome Project sequence has deeply changed the research of sciences including nutrition. The analysis of the genome is already part of clinical care in oncology, pharmacology, infectious disease and, rare and undiagnosed diseases. The implications of genetic variations in shaping individual nutritional requirements have been recognised and conclusively proven, yet routine use of genetic information in nutrition and dietetics practice is still far from being implemented. Here's the most familiar example: If you're of Northern European ancestry, you can probably digest milk, and if you're Southeast Asian, you probably can't. Nutrigenomics builds on the three omics disciplines transcriptomics, proteomics and metabolomics. They are a prerequisite for nutritional systems biology, the understanding of the interaction between food components and diet with cells, organs and the whole body. Personalized nutrition is a conceptual analog to personalized diet. This article sets out the path that needs to be taken to build a framework to translate gene–nutrient interaction studies into best-practice guidelines, providing tools that health professionals can use to understand whether genetic variation affects nutritional requirements in their daily clinical practice.

Key words: *Nutrigenomics; Omics; Transcriptomics; Proteomics and Metabolomics; Personalized diet; Genetics.*

Chilli food, Spices and Medicine- an overview

Sauman Mallik

Ex student, Dept. of Nutrition and Dietetics, Vidyasagar Institute of Health
Rangamati, Midnapore, Paschim Medinipur

Abstract

Chilli (*Capsicum annum* L.) is an important commercial and export oriented crop in India. It is the life and soul of all delicious Indian dishes. It has been cultivated for thousands of years. It is famous for its intense pungent taste which is provided by its active constituent capsaicin. It is a good source of vitamins, minerals, dietary fibers and macronutrients. From ancient time it has been used as food, spice and household medicine for several common problems such as carminative, appetizer, stomachic, beverages, relief of pain in neuropathy and counter irritant in treatment of rheumatism, lumbago. It is generally recognized as a powerful local stimulant with no necrotic effect. Chilli plays an important role as an immunity booster, anti-microbial, anti-cancer, anti-ulcer, analgesic, antiinflammatory, anti-septic and anti-hemorrhoidal agent. It is also helpful for the management of burns, psoriasis and chronic migraine. It is also beneficial in heart disorders and diabetes. The purpose of this review work is to outline the nutritional importance, beneficial and injurious effects of chilli on human health.

Keywords: *Capsicum annum* L., capsaicin, Wonder spice, Pharmacology.

Energy and other nutrients sharing by single biscuit from its packet: Merit and demerit.

Rinisha Paira and Pinki Das

Department of Nutrition, Raja Narendralal Khan Women's College, Midnapore,
Dist-Paschim Medinipur, West Bengal

Abstract

Introduction: “Eat healthy and live healthy” is one of the essential requirements for long life. But today's world has been adapted to a system consumption of marketed available ready to eat food for required instant nutrients. **Objectives:** To find out energy and other nutrients sharing by single biscuit from its packet and focus merit and demerit for consumption of biscuits. Most important objective is to establish “how many biscuits consume at a time?” **Method:** I collected 20 various types biscuits packed. Then I observed the nutritive value chart on the packet in 100 g. Then I calculated their energy, carbohydrate, protein, fat and other nutritive value per single biscuit and also calculated their mean \pm SD value. **Results and conclusion:** NutriChoice Thin Arrowroot (4.8g/piece) contains 21.696 kcal, Sunfeast HiFi(4.75g/ piece) contains 23.465 kcal, Britannia Tiger Krunch (4g/ piece) contains 19.32 kcal, Britannia 50 -50 Jeera Masti (3.13g/ piece) contains 14.8988 kcal, Britannia Bourbon(10g/ piece) contains 48.8kcal, Horlicks(5.6g/ piece) contains 25.032 kcal, Britannia Good Day(5.7g/ piece) contains 28.158 kcal, Chatpata Spicy(6.1g/ piece) contains 27.4 kcal, Parle Top Spin(4.9g/ piece) contains 24.206 kcal, Britannia Top Buttery Bites 50-50(4.8g/ piece) contains 23.04 kcal, Top Gold(5.1g/ piece) contains 25.4 kcal, Britannia Milk Bikis (7.14g/ piece) contains 32.4156 kcal, Biskfarm Top Biscuits(4.76g/ piece) contains 22.82 kcal, Googly (5.55g/ piece) contains 27.51579 kcal, Britannia Rusk(9.1g/ piece) contains 40.677 kcal, Bourn Vita(5g/ piece) contains 22.85 kcal, Happy Happy(4.72g/ piece)Contains 23.0336 kcal, Britannia Merie Gold(5g/ piece) contains 22.4 kcal, Sunfeast Marie Light(5.8g/ piece) Contains 26.042 kcal, Sugar Less cream cracker(6.67g/ piece) contains 29.4147 kcal, Raja Big B(4.2g/ piece)Contains 19.97394 kcal, Britannia Tiger Kreemz (7.2g/ piece) contains 34.056 kcal, Parle 20-20 Butter Cookies(5g/ piece) contains 24.5 kcal, Sunfeast Bounce Elaichi Delight(6.85g/ piece) contains 32.332 kcal, Sunfeast Mom's Magic (5.8g/ piece) contains 29.522 kcal, Sunfeast Bounce Pineapple Zing(6.85g/ piece) contains 32.606 kcal, Britannia Nutrichoice Digestive(8.3g/ piece) contains 40.919 kcal.

Key words: Nutrient, carbohydrate, protein, fat.

Cosmic Ray and Its Contribution Formation of Life in Earth

Swagata Ghorai¹, Lopamudra Ojha¹, Anjan samanta^{1,2}

¹Midnapore City College, Kuturiya, Bhadutala, paschim medinipur-721129

²Indian Centre for Space Physics, 43 Chalandika, Garia, Kolkata -700084

Abstract

The high energy radiation, called **Cosmic ray** is the most available radiation in the whole universe. From the nearest solar flare to farthest galaxies collision, the most common outcome result is cosmic ray. If we consider the nearest example as solar flare or solar storm the common seen thing is cosmic ray. As a part of universe like other universal thing the earth is also swallowing the cosmic ray. The earth is receiving the radiation from the universe from the ancient time, its birth. If we consider that the universe was formed by the Big-Bang theory, then we all know about the formation of matter and how it is converted in to equivalent energy, and also planets, stars of universe. We are surprised about us, about our history, and birth. In 1953 Millar & Urey's experiment demonstrate that simple amino acids produced by including electric discharges in a mixture of gases and including cosmic ray possible origin of life. But it is a matter of fact that how the amino acid was formed. Now it is a growing evidence that the life was formed by somehow the contribution of cosmic ray. We can now compute the doses of radiation from the cosmic particles. Apart from this all we know that cosmic ray can change the structure of DNA. Besides it can make chemical reaction. So, if we consider that by the role of cosmic ray flux and by the gasses and components of the ancient earth as the ingredients, the amino acid was formed, then there is a little sign of life formation on earth. If we think that the same procedure was maintained at anywhere in the universe, then there is also a possibility of existence of life any planet of earth.

Correspondence to: swagataghorai05@gmail.com

Prediction of Earthquake in Some Scientific way to give some Early Warning & to Protect Human Resource

Subhadeep Ghosh¹, Debasish Saha¹, Anjan samanta^{1,2}

¹Midnapore City College, Kuturiya, Bhadutala, paschim medinipur-721129

²Indian Centre for Space Physics 43chalantika, Gorla, Kolkata -700084

Abstract

Today by some scientific way we can also get preceding information about earthquake. Before and after earthquake in a certain region we get some anomaly in ionosphere by using an electromagnetic wave [VLF, ELF, and ULF] emitted from different antenna (VTX-in India). This wave interact with the ionosphere and totally reflect from here. The distortion of this electromagnetic wave can be detected by receiver antenna. That has been shown before Nepal earthquake ~7.4M, by using very low frequency wave anomaly in VTX-Malda and VTX-Sitapur. Radon gas emits pre- seismic activity and perturbed the ionosphere. As a result there will be a change in electron density, which produce anomaly. NASA scientists Dr. Dimitar Ouzounov and Dr. Nevin Bryant confirmed pre-quake infra red (IR) emission from the earth surface. Therefore a large area patches appears in night time infrared satellite images and 500-1000 square km land temperature would fluctuate. So this can be a major preceding information about quake. Now there is no reliable way of prediction of an earthquake. This makes the process of prediction sensible and based not only on the empirical relationships but physically understandable.

Correspondence to: subha9734013435@gmail.com

Visible Light Communications—Progresses and Future Outlooks

Subhradeep Patra¹, Prakash Pradhan¹, Rajeswar Mandal¹ Anjan Samanta^{1,2}

¹Midnapore City College, Kuturiya, Bhadutala, Paschim Medinipur-721129

²Indian Centre for Space Physics, 43, Chalandika, Garia, Kolkata -700084

Abstract

Visible light communication is a potentially disruptive form of wireless communication that can supplement radio frequency communication and also uniquely enable novel mobile wireless device use cases. High data rate downlink communication in homes and offices and high accuracy indoor positioning in retail stores are two of the most compelling use cases of this promising new technology. Visible light communications utilizing white light emitting diode (LED) lightings have attracted a lot of interest as a promising technique both for illumination and for communication. In recent years Visible Light Communication (VLC) is growing interest in telecommunication because of its advantages. As VLC uses visible light (~370-780 nm), so it can be used for communication as well as for illumination. It is a carrier free communication system. We are adopting VLC technology due to many highly prominent features like high capacity, high data rate, high spectral efficiency, high energy efficiency, low battery consumption, and low latency. VLC is an exploring subject for future short range high capacity communication system. By sophisticated technology and adopting signal processing the data transfer speed can be achieved to 100 Mb/s. Visible light communication (VLC) has gained tremendous attention recently and has become a favourable complementary technology to millimetre-wave communication in short-range communication scenarios for future 5G networks. **5th generation mobile networks** or **5th generation wireless systems**, abbreviated **5G**, are the proposed next telecommunications standards beyond the current 4G/IMT Advanced standards, operating in the millimetre-wave bands (28, 38, and 60 GHz). 5G technology have to offer high capacity for novel streaming application. It is seen that the worldwide mobile data traffic is growing day by day. Now so there is a need of high capacity, high speed communication. A recent research shows that approximately one exabyte (EB) data was transferred across the global internet by 2000 (0.083 EB/Month). But now it is increased to a value ~2.5 EB/Month by 2014 and it is expected that it will certainly reach the value to >30 EB/Month by 2020. So, as the more and more need of data is required, there will also need to be it fast and secure. In future VLC will meet all the fulfilments. A major fact is that when more data is required at a certain place then a major problem is that a single source can't provide sufficient data to the users. Hence there will be a lack of speed and in this stage VLC technique may provide satisfactory result VLC can be used as the broadcasting of signals in some indoor scenarios to broadcast media like audio/ video/ multimedia. This technology can be replaced in place of Wi-Fi in future for communication. The main advantage of VLC over Wi-Fi is that it remains free from EM radiation. So, it can be used in some places e.g., hospitals, nuclear plants, research centres, airplanes etc. where the third-party signals can affect the main signal. Compared to the other communication technology, VLC have the advantages of no electromagnetic spectrum regulation and no potential health threatens. It is seen that data transmission speed at Gb/s range can provide communication between two nearby buildings, car to car.

Correspondence to: subhradeeppatra97@gmail.com

PALLADIUM CATALYZED SYNTHESIS OF REDUCED PYRANO-NAPHTHOQUINONES: A USEFUL MOIETY FOR VARIOUS DRUGS

Sukla Nandi*

Department of Chemistry, Chandrakona Vidyasagar Mahavidyalaya, Chandrakona Town,
West Midnapore, India
Email: nandisukla@gmail.com

Abstract

Keywords: Reduced pyranonaphthoquinone, Palladium, Intramolecular, Cascad type cyclization.

Pyranonaphthoquinones, which are prevalent in nature, constitute an important research area in organic synthesis due to the pronounced biological activities of these heterocyclic compounds.¹ The pyranonaphthoquinone antibiotics² have been isolated from various strains of bacteria and fungi of microbial origin and are typified by the presence of a basic naphtho[2,3-*c*]pyran-5,10-dione skeleton.

Their applicability for both biochemical and pharmacological use explains the synthetic efforts made by different chemists over the years.³ In connection with our interest in palladium-mediated formation of heterocyclic molecules, the synthesis of reduced pyranonaphthoquinone via palladium(0)-catalyzed cyclization was envisaged.⁴

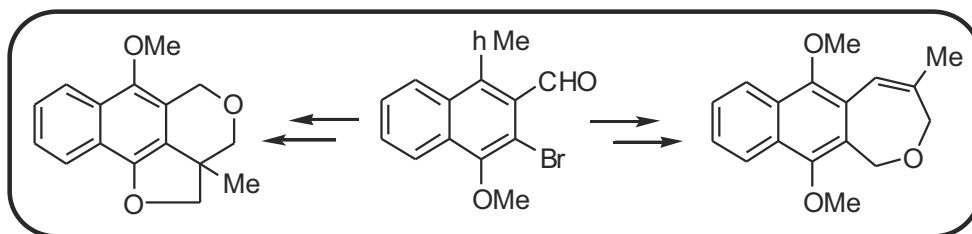


Figure 1: Synthesized reduced pyranonaphthoquinone

References:

1. (a) Arsenault, G. P. *Tetrahedron Lett.* **1965**, 45, 4033–4037 and references therein; (b) Parisot, D.; Devys, M.; Barbier, M. *J. Antibiot.* **1989**, 42, 1189–1190.
2. Brimble, M. A.; Duncalf, L. J.; Nairn, M. R. *Nat. Prod. Rep.* **16**, 267 (1999).
3. Croisy-Delsey, M.; Carrez, D.; Bisagni, E. *Eur. J. Med. Chem.* **1988**, 23, 101–106.
4. (a) Nandi, S.; Samanta, S.; Jana, S.; Ray, J. K. *Tetrahedron Lett.* **2010**, 51, 5294, (b) Nicolaou, K. C.; Li, H.; Nold, A. L.; Pappo, D.; Lenzen, A. *J. Am. Chem. Soc.* **2007**, 129, 10356.

Different dimensions of best practices of quality control

Dr. Sandip Chattopadhyay

Dept. of Biomedical Laboratory Science and Management
(Clinical Nutrition and Dietetics Division)
Vidyasagar University

Abstract

A successful health service and nutritional service are achieved from the implementation of effective quality control management systems. A systematic procedure has to be adopted in an organized way along with the clear understanding of different concepts of quality management for the execution of an effective quality management programme. The relevance of Total Quality Management (TQM) from the perspectives of ethics, integrity, trust, communication system, training, leadership and teamwork should be judged in the way of recognition of safe biomedical techniques and safe food. The strict execution of the guidelines of WHO and Hazard Analysis Critical Control Points (HACCP) is important to facilitate the management of laboratory medicine and food safety respectively. 5Q network is an effective method for monitoring quality assurance and this will definitely lend a hand to accomplish the target of excellence in health and food sectors by reducing the cost of non-conformance. Therefore, quality is a viable priority. Quality is the only factor that certifies an organization's survival, growth, credibility and recognition.

Correspondence: **sandipdoc@mail.vidyasagar.ac.in**

PHEROMONES: SURVIVAL IN THE WILD

Soumyajit Kar and Subho Ghosh

Abstract

Pheromones are chemical substance produced and released into the environment by the wild animal's especially mammals and insects affecting the behaviour or physiology of its species. It is released by organisms to attract individuals of opposite sex, encourage them to mate with them. Some describes pheromones as behaviour –altering agents. The pheromones signals are known to has a potential role in animal reproduction .Mice use pheromones to regulate their social behavioural patterns one attractant prominent pheromone is the sex pheromone .It specially focused on indicating females for breeding attracting the opposite sex and conveying information on the specific age, sex and genotypes insect sex pheromones have found uses in monitoring and trapping of pest insects.

There are different types of pheromones among the animals. Some important pheromones are meant for- aggregation, alarm or fear response, matting, territoriality, trailering etc. Pheromones play a very significant role among the wild animals. Many new outcomes are expected in near future from these fascinating field of ethology.

KEYWORDS: Pheromones, wild animals, Behaviours response.

Application of Biomolecules and Nanoparticles in the field of Nanobiotechnology- Breakthrough and Challenges

Tapanendu Kamilya

Assistant Professor, Department of Physics, Narajole Raj College,
Paschim Medinipur-721211, India

Abstract

"Biophysics", a molecular science is a budding, interdisciplinary subject that applies physics, chemistry and mathematics as tools to biological systems. It develops a quantitative and predictive understanding of biological process at aspect molecular level and promotes an understanding of their physical properties and behaviors.

Scientists analyze and evaluate the relationship between biological function and molecular structure using modern highly specific and sensitive instruments and techniques to scrutinize the properties of specific groups of molecules. In fact, the recent instruments and techniques are such that researchers can yet sight and control single molecules and measure their behavior.

Biophysics is emergent venture in world-wide, motivated primarily with the extensive understanding of the foremost offerings made to biological science by an amalgamation of physical measurements with modern molecular biology. The interdisciplinary work on bioscience has resulted in early detection of diseases, toxic gases, glucose monitoring, alcohol sensors, food testing, molecular motors, mimicking the design of natural substances like bone and shells (bio-mineralization), protein science, drug delivery, biological imaging etc. In all cases the natural biomolecules such as, proteins/enzymes, lipids and natural biomaterials are used for study.

On the other hand, Nanoparticles (NPs) have immense application in biological and medical field due to exceptional size-dependent properties. As for example, Zinc Oxide NPs are using for preparation of sunscreen lotion, ointments, etc. Silver NPs have antibacterial effect. Gold NPs are using as therapeutic agents, etc. Also, in the field of drug delivery and cell imaging the application of nanoparticles open a new field "Nanobiotechnology".

In the field of "Nanobiotechnology" the important research areas are-

- A. Application of Protein/enzyme and Lipids biomolecules for the preparation of thin film of protein/enzyme for preparation of different types of biosensors.
- B. Preparation of lipid, protein-lipid vesicles for targeted drug delivery.
- C. Biomineralization on biomolecular template.
- D. Protein-nanoparticles interaction study and drug delivery.
- E. Nanotoxicology

The challenges on the above mentioned important research areas are-

- A. Preparation of thin film of protein/enzyme with minimal denaturation and greater activity of protein/enzyme.
- B. Preparation of lipid- protein/enzyme vesicle with minimal denaturation and greater activity of protein/enzyme.
- C. Preparation of different crystals with different shape and sizes. The control on crystal growth.
- D. Preparation of biocompatible nanoparticles for safest drug delivery.
- E. To stop the denaturation of blood plasma proteins after application of nanoparticles in line of drug delivery.

References:

- 1. Biocompatibility study of protein capped and uncapped silver nanoparticles on human hemoglobin AK Bhunia, PK Samanta, D Aich, S Saha, T Kamilya*, Journal of Physics D: Applied Physics 48 (23), 235305
- 2. Safety concerns towards the biomedical application of PbS nanoparticles: An approach through protein-PbS interaction and corona formation AK Bhunia, PK Samanta, S Saha, T Kamilya* Applied Physics Letters 104 (12), 12370
- 3. Unfolding of Blood Plasma Albumin Protein in Interaction with CdS Nanoparticles S Saha, T Kamilya, R Bhattacharya, AK Bhunia Science of Advanced Materials 6 (1), 56-62
- 4. ZnO nanoparticle-protein interaction: Corona formation with associated unfolding AK Bhunia, PK Samanta, S Saha, T Kamilya* Applied Physics Letters 103 (14), 143701
- 5. Fibrillation of egg white ovalbumin: a pathway via biomineralization P Pal, M Mahato, T Kamilya, B Tah, R Sarkar, GB Talapatra The Journal of Physical Chemistry B 115 (14), 4259-4265
- 6. Incorporation of pepsin within zwitterionic, anionic, and cationic lipid monolayers: A comparative study T Kamilya, P Pal, M Mahato, R Sarkar, GB Talapatra RSC Advances 1 (2), 333-340

Author to whom correspondence should be addressed. Electronic

mail: tapanenduiacs@gmail.com

Dr. Tapanendu Kamilya,

Assistant Professor

Sponsored by:



Science and Engineering Research Board
DST, Govt. of India

Co-Sponsored by:

Apurba Builders

Prop: Apurba Mondal (Tarun)

Govt. approved building contractor and general order supplier.

Address: Midnapore, Paschim Medinipur, Keranitola, 721101

Contact no- 9932991884



Shivam Cable Networks and Siti Broadband ***HIGH SPEED INTERNET SERVICE***

Prop: Omnath Mahata

Address: Vill+P.O- Bhadutala, Paschim Medinipur, 721129

Contact No- 7679079910



SURUCHI CHEMICAL SUPPLIERS

Prop: Rajesh Kumar Palmal

Address: Abash, Paschim Medinipur

Email- plmlmid@gmail.com

Contact No- 7797833771, 8670697592, 9832110012, 9933621744



Ghosh Enterprise

Prop: Tara Pada Ghosh (Taru Da)

Address: Tara, Bhadutala, Paschim Medinipur

All kinds of Building Materials are available here.

Specialist- (Boulder, Morrum, Soil)

Contact No- 9733652926

J.K. Printers

Judge's Court Road, Midnapore, Paschim Medinipur.



ভগবানের কাছে প্রার্থনা নতুন বছরের দিনগুলি যেন সুখ স্বাস্থ্যে ভরে উঠে –

ভারতীয় জীবন বীমা নিগম
প্রিমিয়াম পয়েন্ট

মধুসূদন ঘোষ গোল্ড মেডেল প্রাপ্ত

ঘাটাল শাখায় প্রিমিয়ামে প্রথম স্থান অর্জনকারী এজেন্ট এবং C.L.I.A. যথাক্রমে ২০১২-১৩, ২০১৩-১৪, ২০১৪-১৫, ২০১৫-১৬ আর্থিক বছরে M.D.R.T. কোয়ালিফায়েড (২০০৮) চন্দ্রকোণা থানার একমাত্র এজেন্ট, চেয়ারম্যান ক্লাব মেম্বর (C.M.'s Club Member)

নতুন এজেন্ট হওয়ার জন্য যোগাযোগ করুন

সিমলা (পলাশচাবড়ী), কড়াশিয়া, পশ্চিম মেদিনীপুর

L.I.C. যে কোন শাখার পলিসি জমা করা যায়, তমলুক ঘাটাল সেন্ট্রাল কো-অপারেটিভ ব্যাঙ্ক (চন্দ্রকোণা) -এর বিপরীতে।

মোবাইলঃ ৯৯৩২৭১৫০১৬, ৯১৫৩২৬৮৮৫০



Sponsored from a well wisher



MIDNAPORE CITY COLLEGE

Recognised by UGC Govt. of India and Higher Education Department,
Govt. of West Bengal & affiliated to Vidyasagar University

Run & Manage by
MORaine
Human Resource Development Organization



UG COURSES

B.Sc Honors in Mathematics
B.Sc Honors in Chemistry
B.Sc Honors in Botany
B.Sc Honors in Zoology
B.Sc Honors in Physics
B.Sc Honors in Nutrition
B.Sc Honors in Geography
B.Sc in Medical Laboratory Technician (BMLT)
Bachelor of Hospital Management (BHM)
B.A Honors in Bengali
B.A Honors in English
B.A Honors in History
B.A Honors in Education
B.A Honors in Sanskrit

PG COURSES

MA in Bengali
M.A in English
MA in History
M.A in Education
M.Sc in Geography
M.Sc in Botany
M.Sc in Zoology
M.Sc in Physics
M.Sc in Chemistry
M.Sc in Nutrition & Dietetics
M.Sc in Food Science & Nutrition
M.Sc in Mathematics
Master in Hospital Administration (MHA)
M.Sc in Medical Laboratory Technician(MMLT)

POST MASTER DEGREE

Post M.Sc in Dietetics

Kuturiya, Bhadutala, Paschim Medinipur, Pin- 721 129, West Bengal, India

Help line :
9547414192, 8967598946

Visit us at:
www.mcconline.org.in