C U R R I C U L U M V I T A E

Dr. Sudipta Chakrabarti, M.Sc., PhD

Principal & Associate Professor in Biological Sciences,
Midnapore City College

Address:

Office:
Midnapore City College
Kuturiya, Bhadutala,Paschim Medinipore-721129 West Bengal, India
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Looking for Drugs and Methods to Combat Neurological Disorders and Cancer

My research is exploring glial and neuronal cell signaling and neural stem cell differentiation with an emphasis to discover drugs and therapeutic strategies against neuroinflammatory and neurodegenerative disorders and cancer.

Work may help people suffering from:

- Alzheimer's disease
- Dementia
- Parkinson's disease
- Batten disease
- Obesity-associated neurocognitive disorders

Present Research Field:

- ❖ Looking for Drugs and Methods to Combat Neurological Disorders and Cancer
- ❖ Regulation of gene activity and signal transduction.
- ❖ Mechanisms of gene repression and gene activation
- ❖ Genetic basis of human disease like cancer, neurological disease, endocrinal disease etc.

Contact Details

Address for Communication in India:

C/O Late Samarendra Chakrabarti,

Balichak Lock-gate, PO. Balichak,

Dist. Paschim Medinipur, Pin 721124, West Bengal, India.

Personal Details:

Date of Birth: 3rd January, 1980 ***Sex:*** Male ***Nationality:*** Indian

Publications:

1. Roy A, Kundu M, **Chakrabarti S**, Patel DR, Pahan K. (2021) "Oleamide, a Sleep-Inducing Supplement, Upregulates Doublecortin in Hippocampal Progenitor Cells via PPARα" **Journal of Alzheimers Disease**.. Online ahead of print, ISSN: 1387-2877 (print); 1875-8908 (web), doi: 10.3233/JAD-215124, **Impact Factor of 4.472**
2. **Chakrabarti S**, Prorok T, Roy A, Patel DR, Dasarathi S, and Pahan K (2021) "Upregulation of IL-1 Receptor Antagonist by Aspirin in Glial Cells via Peroxisome Proliferator-Activated Receptor-Alpha" **Journal of Alzheimer's Disease Reports** 5 (2021) 647–661 (Sister publication of the **Journal of Alzheimer's Disease**), ISSN: 2542-4823, DOI 10.3233/ADR-210026**, Impact Factor: 3.909**
3. Pradhan S, Panchali T, Paul B, Khatun A, Sreenivasa Rao J, Mondal KC, Ghosh K, **Chakrabarti S.** (2020) "Antiobesity potentiality of Tapra fish (*Opisthopterus tardoore*) oil" **Journal of Food Biochemistry,** 2020;00:e13448, doi:10.1111/jfbc.13448, ISSN:1745-4514, **Impact factor: 2.720**
4. Roy Chattopadhyay N, Chatterjee K, Tiwari N, **Chakrabarti S**, Sahu SK, Deb Roy S, Ghosh A, Reddy RR, Das P, Mal1 S, Karnar BB, Das AK, Tsering S, Riba K, Pui Z, Zomawia E, Singh YI, Suryawanshi AR, Kumar A, Ganguly D, Goswami C and Choudhuri T**.** (2020), "TLR9 polymorphisms might contribute to the ethnicity bias for EBV-infected Nasopharyngeal Carcinoma" **iScience** 27;23(3):100937. doi: 10.1016/j.isci.2020.100937. ISSN: 2589-0042**. Impact factor 5.458**
5. Roy Chattopadhyay N, **Chakrabarti S**, Chatterjee K, Deb Roy S, Sahu SK, Reddy RR, Das P, Kanrar BB, Das AK, Tsering S, Puii Z, Zomawia E, Singh YI, Suryawanshi A Choudhuri T. (2019) "HLA regions contribute to the ethnicity bias of EBV-associated NPC in higher-incidence populations" **Scandinavian Journal of Immunology**, e12796, https://doi.org/10.1111/sji.12796, ISSN:1365-3083 **Impact factor 3.487**
6. Pahan K, **Chakrabarti S,** Roy A, Prorok T, Patel DR, Dasarathy S. (2019) "Aspirin upregulates IL-1Ra in glial cells via PPAR-alpha" **Society for Neuroscience**,. Conference: 49th Annual Meeting of Society for Neuroscience, 2019, DOI: 10.13140/RG.2.2.29161.44649
7. **Chakrabarti S,** Roy A, Prorok T, Patel D, Dasarathi S, Pahan K (2019) "Aspirin upregulates Suppressor of Cytokine Signaling 3 in glial cells via PPARalpha" **Journal of Neurochemistry**, **151:** 50—63. https://doi.org/10.1111/jnc.14813, ISSN:1471-4159, **Impact factor. 5.372**
8. **Chakrabarti S,** Chandra S , Roy A, Dasarathi S, Kundu M and Pahan K, (2019) "Upregulation of tripeptidyl-peptidase 1 by 3-hydroxy-(2,2)-dimethyl butyrate, a brain endogenous ligand of PPARα: Implications for lateinfantile Batten disease therapy" **Neurobiology of Disease** 127 (2019): 362–373 ISSN: 0969-9961, doi: 10.1016/j.nbd.2019.03.025, **Impact Factor. 5.996**

9. Roy A, Kundu M, **Chakrabarti S**, Patel DR, Bennett DA, Gonzalez FJ, Pahan K (2019) "Activation of PPARα Stimulates Hippocampal Neurogenesis" **Cell Reports – Cell Press** D-19-01561 **ISSN: 2211-1247, Impact Factor. 9.423**
doi: http://dx.doi.org/10.2139/ssrn.3379969 SSRN: https://ssrn.com/abstract=3379969
10. **Chakrabarti S,** Jana M and Pahan K (2018) "Upregulation of suppressor of cytokine signaling 3 in microglia by cinnamic acid, a component of cinnamon: Implications for neurodegenerative disorders" **Current Alzheimer Research** 15(00): 1-11 doi: 10.2174/1567205015666180507104755. **ISSN: 1875-5828 (Online) ISSN: 1567-2050 (Print) Impact factor. 3.498**
11. Asthana M, Sahu SK, Kumar A, Mohanty S, **Chakrabarti S,** Das P, Roy Chattopadhya N, Chatterjee K, Singh SP, Rajasubramaniam S, Choudhuri T. (2018), "Role of Interleukin 28B polymorphisms in response to Interferon based therapy for hepatitis C virus clearance" **Current Drug Metabolism** 19(3):215-223. doi: 10.2174/1389200219666180129115359 **ISSN: 1875-5453 (Online) Impact Factor. 3.731**
12. Sahu SK, **Chakrabarti S,** Roy SD, Baishya N, Reddy RR, Suklabaidya S, Kumar A, Mohanty S, Maji S, Suryanwanshi A, Rajasubramaniam S, Asthana M, Panda AK, Singh SP, Ganguly S, Shaw OP, Bichhwalia AK, Sahoo PK, Chattopadhyay NR, Chatterjee K, Kundu CN, Das AK, Kannan R, Zorenpuii, Zomawia E, Sema SA,Singh YI, Ghosh SK, Sharma K, Das BS and Choudhuri T. (2016) "Association of p53 codon72 Arg4Pro polymorphism with susceptibility to nasopharyngeal carcinoma: evidence from a case–control study and meta-analysis" **Oncogenesis - Nature,** 5, e225; doi:10.1038/oncsis.2016.31 **ISSN 2157-9024 (Online) Impact Factor. 7.485**
13. Burlak C and **Chakrabarti S** (2015) "Xenotransplantation literature update, July–August 2015" **Xenotransplantation**, Article first published online: 2015, 22(5):408-10. **ISSN:1399-3089 (Online)** doi. **https://doi.org/10.1111/xen.12197 Impact factor: 3.907**
14. Kumar A, Sahu SK, Mohanty S, **Chakrabarti S,** Maji S, Reddy RR, Jha AK, Goswami C, Kundu CN, Rajasubramaniam S, Verma SC, Choudhuri T.(2014)"Kaposi Sarcoma Herpes Virus Latency Associated Nuclear Antigen Protein Release the G2/M Cell Cycle Blocks by Modulating ATM/ATR Mediated Checkpoint Pathway" **PLoS One** 9(6):e100228, eISSN-1932-6203 **ISSN:1932-6203 doi: 10.1371/journal.pone.0100228. eCollection 2014. Impact factor: 3.240**
15. Guria S, Bankura B, Balmiki N, Pattanayak AK, Das TK, Sinha A, **Chakrabarti S,** Chowdhury S and Das M, (2014) Functional Analysis of Thyroid Peroxidase (TPO) Gene Mutations Detected in Patients with thyroid dyshormonogenesis, **International Journal of Endocrinology**, 2014:390121. Article ID 390121, 8 pages **ISSN No. 1687-8345 doi: 10.1155/2014/390121. Impact factor. 3.257**
16. Balmiki N, Bankura B, Guria S, Das TK, Pattanayak AK, Sinha A, **Chakrabarti S,** Chowdhury S and Das M."(2014) Genetic analysis of thyroid peroxidase (TPO) gene in patients whose hypothyroidism was found in adulthood in West Bengal, India" **Endocrine Journal** , 61(3): 289-296 **ISSN: 1348-4540 https://doi.org/10.1507/endocrj.EJ13-0237 Impact factor. 2.349**

17. Asthana M, Kumar A, **Chkarbarti S** and Choudhuri T. (2013) "Hepatitis C virus: an emerging threat (Oral presentation). In XXI National Conference on Immunobiology and Management of Viral Diseases in 21stCentury held at IVRI, Mukteswar, India from 8-10 Nov, 2012. **Indian J. Virology, ISSN: 2347-3584 (Print) 2347-3517 (Online)** DOI 10.1007/s13337-013-0132-5 **, Impact factor. 2.20**
18. **Chakrabarti S,** Suklabaidya S, Maji S, Choudhuri T. "Comparative clinical genomics and proteomics of nasopharyngeal carcinoma in Indian population" International Congress on Oncogenic Herpesvirus Philadelphia, Pennsylvania-August1-4,2012 Conference Proceedings
19. Balmiki N, Guria S, Bankura B, Pattanayak AK, Das TK, Sinha A, **Chakrabarti S**, Chowdhury S, and Das M. (2012)"Clinical Spectrum of Hypothyroidism in West Bengal,India" **Animal Biology Journal**.3(1):31-37 **ISSN:1949-498X** Indexed by Google Scholar. Nova sc. international
20. Guria S, Balmiki N, Bankura B, Pattanayak AK, Sinha A, Das TK, **Chakrabarti S**, Chowdhury S, Das M (2012) Thyroid peroxidase (TPO) gene mutation in hypothyroid females and its association with menstrual disturbances and abortion in the Population of west Bengal. **NBU J. Anim. Sc.** 6: 40–47, **ISSN 0975-1424**
21. Guria S, Balmiki N, Chakrabarti S and Das M. (2011). Is hypothyroidism responsible for ovarian functional changes in rat? Recent Advance in Animal Science Research, IV (B): 773-776.
22. Guria S., Balmiki N., **Chakrabarti S.**, and Das M. (2011) "Methimazole Induced Hypothyroidism Modulates Cytomorphology of Skin Epidermis and Collagen Synthesis in Rat" **Animal Biology Journal**. 2(3): **ISSN: 1949-498X** Indexed by Google Scholar. Nova sc. international
23. Guria S., Balmiki N., **Chakrabarti S.,** Das M. (2010) "Thyroid deregulation causes cellular damages in pancreatic islets and spleen in rat" **Animal Biology Journal**. 2(1): 29-35. **ISSN: 1949-498X** Indexed by Google Scholar. Nova sc. international
24. **Chakrabarti S.,**Guria S., Balmiki N., Das M. (2010) "Thyroid hormone mediated maintenance of glucose homeostasis and cytomorphology of cardiac muscle and skin in rat" **Animal Biology Journal**; 3(3):1-7. **ISSN: 1949-498X** Indexed by Google Scholar. Nova sc. international
25. **Chakrabarti S**.,Guria S.,Samanta I.,Das M. (2007) "Thyroid dysfunction modulates glucoregulatory mechanism in Rat"; **Indian J Exp Biol**.; 45(6):549-53. **ISSN: 0975-1009 (Online) ISSN: 0019-5189 (Print) Impact factor. Impact factor. 1.165**
26. **Chakrabarti S.,** Guria S., Samanta I., Das M. (2006) "Thyroid dysfunction and its effect on testis in rat"; **Proc.Zool.Soc**.; 59(2); 215-219 **ISSN: 0373-5893 (print version) ISSN: 0974-6919 (electronic version)**

Book Chapter:

1. **Sudipta Chakrabarti,** Srikanta Guria, Nisha Balmiki and Madhusudan Das "Thyroid Hormone Mediated Maintenance of Glucose Homeostasis and Cytomorphology of Cardiac Muscle and Skin in Rat" **Animal Science, Issues and Professions**, Editor

Jose Rosa Gomes, **Nova science publishers Inc. New York, USA**; Originally published: 2011 pp. 157-164, **ISBN: 978-1-61761-870-3**

2. Srikanta Guria, Nisha Balmiki, **Sudipta Chakrabarti** & and Madhusudan Das (2014). Thyroid deregulation causes cellular damage in pancreatic islets and spleens in rats. **Vertebrate and Invertebrate Animal Approaches:25–31. 2014, Published in Nova Science Publishers, Inc. New York, USA, ISBN:978-1-63117-102-4**
3. Srikanta Guria, Nisha Balmiki, **Sudipta Chakrabarti** & and Madhusudan Das (2014). Methimazole-induced hypothyroidism modulates cytomorphology of skin epidermis and collagen synthesis in rats. **Vertebrate and Invertebrate Animal Approaches:39–44. Jose Rosa Gomes Nova Sc. Publisher Int. New York, USA, ISBN:978-1-63117-102-4**
4. Nisha Balmiki, Srikanta Guria, Biswabandhu Bankura, Arup Kumar Pattanayak, Tapas Kumar Das, Anirban Sinha, **Sudipta Chakrabarti**, Subhankar Chowdhury, and Madhusudan Das (2014) Clinical Spectrum of Hypothyroidism in West Bengal, India, **Vertebrate and Invertebrate Animal Approaches (2014) Jose Rosa Gomes Nova Sc. Publisher Int. New York, USA, ISBN:978-1-63117-102-4**

Employment Experience

1. **2017 August- Till date** working as a Principal of Midnapore City College, Kutoriya, Bhadutala, Midnapore, Paschim Medinipur 721129, West Bengal, India
2. **2017 September to Till Date** Visiting Faculty Post Graduate Department of Botany Midnapore College, Midnapore West Bengal, India
3. **2019 January to Till Date** Visiting Faculty Post Graduate Department of Zoology Raja N.L. Khan Women's College, Midnapore West Bengal, India
4. **2015 August to 2017 July** working as a Post-Doctoral Research Fellow in the Rush University Medical Center, Chicago. IL, USA
5. **2015 February to 2015 August** working as a Post-Doctoral Associate in the Masonic Cancer Center, University of Minnesota, Minneapolis, MN, USA
6. **2014 February to 2015 February** working as a Senior Scientist, Biotechayur Pvt. Ltd. (Best Nutrition Products.Inc, USA) Balasore, India.
7. **2011, August-2014, February** working as a Scientist in the NPC project coordination cell, Institute of Life Sciences (DBT, Govt of India), Bhubaneswar, India.
8. **2010, April-2011 March** working as a SRF (Ext) CSIR in the Chittaranjan Cancer Institute, Kolkata, India.
9. **2010 January-2010 March** Working as a post-doctoral research fellow DBT in the Indian Institute of Science, Bangalore, India

Educational Training

1. **2010, April - 2011, March**: Working as a SRF (EXT) CSIR in Chittaranjan National Cancer Institute (CNCI), Kolkata, India
2. **2010**: Working as a DBT-Post-Doctoral Fellow in Indian Institute of Science, Bangalore, India
3. **2010, April**: I have received PhD from the University of Calcutta, India

4. **2004 – 2009**: Worked as a Research Fellow in Department of Zoology, University of Calcutta, India, as in the field of Endocrinology. (For Ph. D. degree) **Thesis submitted on 13th July 2009**.
5. **M.Sc Botany** 1st.Class with 69.2% from CSJM University, Kanpur in the year 2003.
6. **B.Sc (Hons) Botany 2nd.Class** from University of Calcutta, Kolkata, in the year 2000.
7. **2004 April- September 2004**: Worked as a Project Assistant in Department of Botany, University of Calcutta, India, as in the field of Microbiology.

Academic Honours & Awards

1. DBT-Post Doctoral fellowship 2010, From DBT, Govt of India at Indian Institute of Science, Bangalore, India.
2. CSIR SRF (Ext) fellowship 2010, from CSIR, Govt of India, New Delhi, India
3. Post-doctoral Associate fellowship 2015 from NIH in the University of Minnesota, MN USA
4. Post-doctoral fellowship 2015 from NIH, in the Rush University, Chicago, IL, USA
5. Certificate of Excellence Award on Drug Discovery& Development 2017, From Rush University Medical Canter, Chicago, IL, USA

Member Board Studies

1. Chairman, Post Graduate studies in Botany, Midnapore City College
2. Chairman, Post Graduate studies in Zoology, Midnapore City College
3. Chairman, Post Graduate studies in Nutrition and Dietetics, Midnapore City College
4. Chairman, Post Graduate studies in Food Science and Nutrition, Midnapore City College

Examiner and Paper Setter

1. Paper Setter Post Graduate studies in Botany and Zoology, Midnapore City College
2. Examiner Postgraduate studies of Botany and Zollogy, Midnapore City College
3. Paper setter and examiner post graduate studies in Physiology, Midnapore College
4. Paper setter and examiner Under Graduate studies in Microbiology, Vidyasagar University, Midnapore

Research Experiences

(Techniques acquainted with:)

- **Cell Biology:** Histology of tissues, Basic histological techniques like tissue fixation, embedding, microtomy, staining, Light Microscopy, Fluorescence microscopy, Confocal Microscopy, Study of cellular morphology, Apoptosis study, DAPI staining, Comet Assay, Cell culture and microbiological work, Immunohistochemistry (IHC), FLOW cytometric analysis, Stem cell Biology, Issolation and preparation of cells from mouse bone marrow for bone marrow transplantation, Different cell separation techniques (like using magnetic bid separation), Radioactive Tracer Technique, etc.

- **Biochemistry:** Biochemical analysis of liver glycogen, Blood sugar, Purification of proteins, Enzyme assay, Enzyme purification of tagged proteins, Functional characterization of enzyme, Hormone assay by RIA method, Isolation of total protein, Oral glucose tolerance test (OGTT), Insulin tolerance test (ITT), Blood glucose estimation by Glucometer and other biochemical method , HPLC quantitation of metabolites and drugs, Radiochemistry, etc.
- **Phytochemistry and pharma research**: Plant compound isolation, purification and characterization (laboratory scale and industrial scale), QA and QC of phytochemicals.
- **Immunology**: Immuno-precipitation (IP, Co-IP, ChIP, RIP, Tagged Protein i.e. GFP,GST, Flag tag), immune-localization (IHC), immune-flurescence (DAPI, FITC, Rodamine, AnaxinV) etc.
- **Cytogenetics:** Karyotyping, chromosome studies, chromosomal aberration (CA), mitotic index (MI) etc.
- **Molecular Biology:** DNA isolation from blood and other tissue (Cryo preserved and Paraffin Embedded), PCR, DNA purification, DNA sequencing, SNP study, Deletion, methylation, mutation study, Southern blot, restriction digestion, plasmid isolation, transfection, cloning, RNA isolation, RNA expression, study (RT-PCR), Northern blot, expression of proteins, Western Blot, Protein isolation, Agarose gel electrophoresis, SDS-PAGE, RFLP, SSCP analysis, Comet Assay by SYBR Green, Proteomics (using 2D Gel electrophoresis, LCMS/MS, MALDI TOF/TOF), etc.
- **Animal Work:** Colony maintenance of rat & mouse, Transgenic mice breeding and genotyping, Bone marrow transplantation, Xenotransplantation, Chimera preparation.
- **Bio informatics:** Internet Basics, Electronic mail, connecting to the internet, File transfer protocol, The world wide web, NCBI data model, Sequence study, Study of gene bank sequence, Study of phylogeny, population study, Mutation study, DNA sequence submission, Primer designing, Human genome sequence study, Study of sequence data base of NCBI, Genome analysis, DNA polymorphism study, SNP, DNA, RNA and protein sequence analysis, RNA structure determination from amino acid sequence by using software etc.
- **Computer Knowledge:** MS-Word, Excel, Power Point, Adobe Photoshop, Paint, etc.
- **Others:** Plant Pathological and Microbiological techniques, Morphological study of Plants including Algae and Fungi, taxonomy etc.

Research work presentation

Seminar Presented

1. **Chakrabarti S.** Guria S., , Balmiki N. and Das M. " Thyroid Peroxidase (TPO) Gene polymorphism and its relation with thyroid deregulation" Faunal Diversity: Status,Utilization and Impact on Human Health, organised by Department of Zoology,University of Calcutta, Sponsord by UGC-SAP-DRS-1 and University of Calcutta on16th.February,2008, **Oral Presentation**
2. Guria S., **Chakrabarti S**.,Balmiki N.,and Das M. " Thyroid dysfunction and its effect on different organs in rat "Faunal Diversity: Status, Utilization and Impact on Human

Health", organised by Department of Zoology, University of Calcutta, Sponsord by UGC-SAP-DRS-1 and University of Calcutta on16th.February,2008, **Poster Presentation**

3. **Chakrabarti S,** Suklabaidya S, Maji S, Choudhuri T."Comparative clinicalgenomics and proteomics of nasopharyngeal carcinoma in Indian population" International Congress on Oncogenic Herpesvirus and Associated Diseases. Philadelphia, Pennsylvania-August1-4,2012 **Poster Presentation**
4. Asthana M, Kumar A, **Chakarbarti S** and Choudhuri T. "Hepatitis C virus: an emerging threat (Oral presentation). In XXI National Conference on Immunobiology and Management of Viral Diseases in 21stCentury held at IVRI, Mukteswar, India from 8-10 Nov, 2012. **Oral Presentation**
5. **Chakrabarti S,** "Role of angiogenesis in Cancer development". **Invited Lecture**, Post Graduate Department of Botany, Midnapore College.(Autonomous). 2017
6. **Chakrabarti S.** "Metaststis and Cancer" **Invited Lecture** Post Graduate Department of Botany, Midnapore College.(Autonomous). 2018
7. **Chakrabarti S**, Pahan K "Up regulation of suppressor of cytokine signalling 3 in microglia using a cinnamon product; cinnamic acid: Suggestions for neurodegenerative disorders" **Perspectives of Human Health, Microbial Biotechnology & Innovation,** Dept. of Human Physiology & Dept. of Microbiology, Viduasagar University, Midnapore, West Bengal India. **National Seminar, Vidyasagar University, 2018, Invites Speaker.**
8. **Chakrabarti S,** Pahan K "Upregulation of tripeptidyl-peptidase 1 by 3-hydroxy-(2,2)-dimethyl butyrate, a brain endogenous ligand of PPARα: Implications for late-infantile Batten disease therapy" **Recent Trends in Physiology and Healthcare Research for Salubrious Society**, DRDO, Govt of India Sponsored National Conference "PHYSICON-2019" XXXIst Annual Conference of the Physiological Society 15th to 17th November, 2019, Department of Physiology, Bankura Christian College, **Invited Speaker**.

Conference/Workshop/ Symposium attended

National/ International:

1. Evolutionary Biology And Biotechnology, organised by The Zoological Society,Kolkata in collaboration with Zoological Survey of India and Department of Zoology, University of Calcutta,on 26th.february 2005. **Oral Presentation**
2. Biological Research-Now And Beyond, organised by Department of Zoology, University of Calcutta, on 30th.March, 2005. **Poster Presentation**
3. Faunal Diversity: Status, Utilization and Impact on Human Health, organized by Department of Zoology, University of Calcutta, Sponsord by UGC-SAP-DRS-1and University of Calcutta on16th. February,2008, **Oral Presentation**
4. Two days' work shop in Good Clinical Practice (GCP) held in Cachar Cancer Hospital and Research Center, Silchar, Assam, India, Arranged by NPC project coordination cell, DBT, India, 2012

5. Recent Trends in Parasitological Researches, organized by Department of Zoology, University of Calcutta, on March 23-24, 2006.National Symposium.
6. Perspectives of Human Health, Microbial Biotechnology & Innovation, Dept. of Human Physiology & Dept. of Microbiology, Viduasagar University, Midnapore, West Bengal India. National Seminar, Vidyasagar University, 2018, **Invites Speaker**.
7. Recent Trends in Physiology and Healthcare Research for Salubrious Society, DRDO, Govt of India Sponsored National Conference "PHYSICON-2019" XXXIst Annual Conference of the Physiological Society 15th to 17th November, 2019, Department of Physiology, Bankura Christian College, **Invited Speaker**.
8. Chakrabarti S, Pahan K "Aspirin up-regulates suppressor of cytokine signaling 3 in glial cells via PPARα" 'Contemporary Innovative Issues and Future Challenges in Physiology and Allied Sciences' (ICCIIFCPAS- 2020), Organized by Department of Human Physiology, Vidyasagar University, Midnapore- 721102, West Bengal, India, **Invited speaker (plenary lecture) International Conference**

Conference/Workshop/Symposium organized

National Seminar

SL. NO	TITLE OF SEMINAR, CONFERENCE OR WORKSHOP	DATE	NO OF PARTICIPANTS	FUNDING AGENCY
1.	A Two Day National Level Seminar on "Role of Basic Sciences in Translational Research applied on Biological Sciences and Human Health". **(Role: Convenor)**	5th -6th February, 2018	295	Science and Engineering Research Board, Department of Science & Technology (DST SERB), Govt. of India
2.	A Two Day National Level Seminar on "Environmental Change: Adaptation Challenges by Sustainable Development". **(Role: Convenor)**	13th -14th July, 2018	200	Department of Biotechnology (DBT), Govt. of India, Indian Council of Medical Research (ICMR), Govt. of India
3.	Upcoming 2nd Annual National Conference of Midnapore City College in the title of "Academia-Industry Meets on Opportunity and Challenges on Foodomics in Functional Food Preparation Based Industrial Process" **(Role: Convenor)**	5th -6th February, 2019	Approx 350	Science and Engineering Research Board, Department of Science & Technology (DST SERB), Govt. of India, Department of Biotechnology (DBT), Govt. of India

Doctoral (PhD)Thesis title:

Thyroid dysfunction status with special reference to polymorphism of thyroid peroxidase (TPO) gene

Summary of the thesis:

The recent research revealed that thyroid abnormality is the source of many other organ disorders. But it is not very much clear how thyroid dysfunction modulates the function of other organs in the body. Therefore, further investigation needed to unveil the detailed

sequential events of cellular and biochemical changes in rat upon thyroid dysfunction and their relationship with the clinically defined thyroid patients in our population. Thyroid hormone biosynthesis is mediated by a key enzyme thyroid peroxidase (TPO). TPO is a rate limiting enzyme of thyroid hormone biosynthesis and is required for the coupling of iodine to tyrosine molecule to form thyroid hormones. Methimazole, an inhibitor of TPO enzyme was used to induce hypothyroid and thyroxine to induce hyperthyroid conditions in experimental rat. The investigation includes the parameters like T3 and T4 hormones, liver glycogen, SGPT, SGOT, OGTT (Oral Glucose Tolerance Test), histology of pancreas, liver, testis. The thyroid hormone level may change upon the mutations/ polymorphism of TPO gene. Mutations in the thyroid peroxidase (TPO) gene (particularly non - synonymous cSNPs) can lead to severe defects in thyroid hormone production, due to total iodide organification defects (TIOD) or partial iodide organification defects (PIOD). Therefore, the investigation was also aimed to understand whether hypothyroid patients are associated with mutations/polymorphism (s) in TPO gene coding sequence. The results showed significant changes in T3, T4 hormones, liver glycogen, serum SGPT and SGOT in both hypothyroid and hyperthyroid rat. Significant alterations of OGTT curves observed in both hypothyroid and hyperthyroid groups of rat. Tissue samples from liver, pancreas, testes exhibited significant changes in histologically upon experimental induction. Sequence analysis of the selected exons in TPO gene demonstrated a number of mutations in patient samples when compared with the normal individuals. The patients showing mutations in TPO gene corroborates the clinical manifestations. Therefore, our results clearly indicate the mutations in TPO gene may be associated with hypothyroidism.

Also involved in the other Research (during PhD time) on

1. Collaboration with Dr. A. K. Giri, IICB,and Kolkata Title of the research: DNA Polymorphism related arsenic toxicity in human.
2. Collaboration with Dr. A. K. Maji, School of Tropical Medicine, Kolkata Clinical response of Sulphadoxine-pyrimethamine in P. falciparum malaria in West Bengal population and its Association with DHFR and DHFS gene mutations.

Research Topics during Post-Doctoral research in Chittaranjan National Cancer Institute, Kolkata, India

Analysis of alterations of LIMD1 and RBSP3 genes located in the chromosomal 3p21.3-22 region in breast carcinoma of Indian patients

Research Topics during Post-Doctoral research in Indian Institute of Science, Bangalore, India

Mechanism of BCL6 translocation in Diffuse Large B-cell Lymphoma

Research Topics during Project Assistant Department of Botany, University of Calcutta, Kolkata, India

Inventory of Microbial Resources of India. DBT, New Delhi, India

Research Funding

Title of the Project	Funding Agency	Grant Received (Rs.)	Date of implementation	Remarks
Screening of natural resources from Balasore region and for anti mycotic drug development. **(PI)**	Biotechayur Pvt Ltd, Balasore(Intramural Grant) (Best Nutrition Product Inc, USA) Intramural Grant	9,00,000.00	Feb, 2014	Completed
Identification and characterization of putative bioactive Compounds from cow urine for alleviating obesity, diabetes, and its Associated psychological disorders. **(PI)**	DST Temporary Registration Number : TPN / 48225 SUTRA-PIC India Program	77,00,000.00	13th March, 2020	Under Review
Syringic acid up regulate kiss1 gene expression in the brain (a libido and orgasm potential) **(PI)**	DHR, Govt of India (File no: GIA/2020/000633)	37,00,000.00	Communicated on 27th November, 2020	Under Review
Neuroprotective Effect of Isolated Peptides and Conjugated Fatty Acid(s) extracted from Khoyra fish (*Chatoessus manminna*) in Alzheimer's disease: A Mechanistic Study. **(PI)**	ICMR, Govt of India	35,00,000.00	Communicated 17th January, 2021	Communicated

Thesis Submitted	No Fellow Thesis Submitted/Awarded
PhD	1 (Awarded)
1. **Dr. Santanu Bera** PhD in Environmental Science, awarded **2019**, Sri Satya Sai University of Technology & Medical Science, (Thesis Title: Critical analysis of hygienic status and associated diseases in the tribal dominated villages in Paschim Medinipur, West Bengal).	
M.Sc	15 (Awarded)

Current Research:

The goals of my research program are as follows:

- To develop a diverse and productive research program in neuroimmunology,
- To provide a strong scientific basis for natural resource in neuronal protection.

- To train graduate and undergraduate students in research and screening of natural resources for neuronal protection.

Next five years I am looking forward to focus on research areas that can extend the availability and usefulness of technology and its advancement to our society directly. I believe that this will certainly enhance their quality of living. These are some of my research problems:

1. **Syringic acid up regulate kiss1 gene expression in the brain (a libido and orgasm potential).**

In this project extensive studies will be made on whether syringic acid regulate *Kiss1* gene expression in the neuronal and glial cell system (*in vitro* and *in vivo*). The rationale behind the proposed study is that there exists a possibility of up-regulation of *Kiss1* expression by syringic acid (initial data shown), chances of revival of lost libido and orgasm potential may be improved but the mechanisms underlying these observations are currently unknown which is the aim of present project. Present project will no doubt investigate the plethora of sexual behaviors and attempt to delineate the precise neuronal pathways involved. The extensive studies will be made on whether syringic acid regulate Kiss1 expression in the neuronal and glial cell system. Syringic acid is a natural phenolic compound from different plant sources will explore the benefits has on sexual performance. We got the selective increment of Kiss1 after the syringic acid treatment. We need further study for the establishment the effect and the signaling pathway for the same.

2. **Establishment of neuroprotective role of new peptide(s) and conjugate fatty acids CFA(s) extracted from sea fish oil: A mechanistic study.**

The role of neuroprotection involves a number of effects including a potential role against injury induced by neurotoxic species, an ability to suppress neuro-inflammation and to promote effective cognitive function. Different types of poly unsaturated fatty acids which will be isolated from different varieties of sea fish that would be applied on neuronal cell for neuroprotection. Different species of sea fish collected from sea coast area and fish oil extractied. After identification and characterization of conjugate fatty acid it will be applied on neuronal and glial cell to investigate cytokine production by different technique. This study may support to find out the solution about neuronal protection. The present study is proposed with following objectives. Small peptide and conjugate fatty acids based drug formulation combine focuses much attention in the treatment of inflammation and neurodegenerative diseases. Therefore sole aim of the study is to develop peptides and conjugate fatty acid(s) from different species of fasa fish (Setipinna phasa) oil which will be used as effective tool of neuronal protection. By this novel therapeutic strategy the society people must be benefited.

3. **Understanding of the role of vaginal microbiota in polycystic ovarian disease (PCOD): survey based and mechanistic approach.**

Polycystic ovarian disease (PCOD) is a fatal syndrome that affects ovaries and ovulation in women, with an estimated Indian occurrence of about 20% in 2017. Recent studies showed that vaginal microbiota might be associated with gynaecological disorders. However, association between vaginal microbiome and PCOS has not been almost studied. Therefore, we aimed to establish this relationship. Vaginal swabs will be collected from PCOS patients and normal healthy individual (control). Then isolated DNA of swabs will be PCR amplified followed by NGS. The processed sequence will be used to find out the dominant microbial group and correlation between dominant bacteria with PCOD will be established using high end statistical methodologies. Then probiotic lactic acid bacteria will be implanted to the vagina of PCOD patients and will be analysed its efficacy. The proposed study will first time establish the relationship between vaginal microbiome with PCOD, and possible treatment with probiotic.

4. αMSH regulation of dopamine circuits in the control of feeding and body weight

Obesity is a serious health problem with total annual medical and economic costs estimated at >$100 billion, yet there are few effective treatments currently available to combat obesity. Food intake is a critical factor driving obesity, and the excessive consumption of appetizing foods high in fat and/or sugar is likely a significant contributor to the rise in obesity, as the intake of these foods has increased in parallel to the rise in obesity levels. Dopamine is an essential neurotransmitter that plays an important role in the control of feeding, including the intake of appetizing high fat/high sugar foods. A critical barrier to progress in combating obesity is our limited understanding of exactly how dopamine pathways control feeding, including how other feeding-related neural circuits interact with dopamine circuits to control feeding. αMSH and its central receptors, the MC3R and MC4R, have been well-characterized for their roles in controlling feeding and body weight, and increasing evidence indicates that αMSH acts on the mesolimbic dopamine system to affect multiple behaviors, including feeding. We currently do not have a good understanding of how αMSH acts on dopamine pathways to control feeding and body weight however. In this proposal we will identify the anatomical organization of the interactions of αMSH neurons with dopamine circuits and will identify the mechanisms by which αMSH regulates VTA dopamine neuron activity. This project will significantly advancing our understanding of the neural mechanisms controlling feeding and may allow for the identification of new strategies to treat and/or prevent obesity. Aim of this proposal is to identify new avenues that can be used to treat and/or prevent obesity by advancing our knowledge of how the mesolimbic dopamine system controls feeding at multiple levels. We will test our central hypothesis that αMSH directly regulates the activity of a subset of VTA dopamine neurons to control feeding at both the homeostatic and hedonic levels. This project will increase our understanding of neural control of feeding and body weight by: 1) identifying the anatomical organization of the interactions of the melanocortin system (αMSH & AgRP) with dopamine circuits; and 2) identifying the mechanisms by which αMSH regulates VTA dopamine neuron activity. This project will impact the obesity research field by advancing our understanding of the neural mechanisms controlling feeding at both the homeostatic and hedonic levels, including providing new knowledge on how dopamine and αMSH/AgRP regulate feeding and body weight.

Ultimately, this knowledge may allow for the identification of new strategies to treat and/or prevent obesity.

5. **Impaired brain equanimity and neurogenesis in diet-induced overweight mouse: a preventive role from sea fish oil**

Overweight and obesity are big health issues worldwide leading to many physiological complaints. Current research emphasized their harmful effects on brain homeostasis and plasticity; nevertheless the mechanisms of such disruptions are still unclear. In this study, we have developed a diet-induced overweight (DIO) model in mouse, for studying the special effects of overfeeding on brain homeostasis and investigating different preventive and therapeutic approaches. By overfeeding mouse for 4 weeks, we report the interruption of many metabolic parameters mimicking human overweight features with augmented body weight, body mass index, fasting blood glucose levels and liver steatosis. Additionally, DIO mouse showed blood–brain barrier leakage, cerebral oxidative stress, neuroinflammation and decreased neurogenesis. Finally, we investigated the preventive beneficial effects of different sea fish oil. Treatment with sea fish oil extract during the 4 weeks of overfeeding limited some harmful effects of DIO mouse. In conclusion, we established an appropriate DIO model in mouse representing that overfeeding damages peripheral and central homeostasis. This work also highlights the protective effects of sea fish oil extracts in DIO mouse, and opens an approach to simply screen drugs pointing at preventive overweight and related neurological disorders.

References

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