CURRICULUM VITAE

Dr. Kasturi Sarkar

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Personal Information

Date and place of birth : 18.08.1975, Kolkata, India.
Nationality : Indian

Research Interest

To study the basic mechanisms of different pathophysiological states related to human beings. Molecular mechanisms involved in different diseases and the structure-function relationship of different bioactive molecules present there.

Projects executed:

2011-2014: Department of Science and Technology (India) funded project "Synbiotic effect of prebiotic molecules and probiotic yeast *Saccharomyces boulardii* on human health" (0306/2008). The aim of the project was to monitor the effect of different prebiotic molecules on the growth of the probiotic yeast *Saccharomyces boulardii.* This project screened several prebiotic molecules to determine their efficacy on *S. boulardii* growth.

2015- 2017: University Grants Commission (India) funded Minor project 'Effect of prebiotics on the antibiotic sensitivity pattern of various lactobacilli' (080/14-15.

2020-2025: DBT builder project (India); multi component Major project.

2023-2024: Intramural research grant titled 'evaluation of the antiglycemic potential of 7,8-dihydroxy-2H-1-benzipyran 2-one on human pancreatic alpha-amylase' funded by St. Xavier's college, Kolkata.

Research Experience

Study of synbiotic effects of probiotics (lactobacilli, bacilli, *S.boulardii*) and prebiotics.

Purification of unknown protein and Enzymology

in vitro studies like primary cell culture- Isolation of hepatocytes from rat/mouse liver by collagen perfusion method and maintenance in culture medium. Studies of cell survivability, membrane leakage, apoptosis, necrosis in isolated and cultured hepatocytes, experience of cardiomyocyte stem cell culture.
Studied Drosophila embryogenesis (expression of stardust protein) at the Max Plank Institute for Cellular biology and genetics.

in vivo studies in mice model: Measurement of different marker enzymes related to physiological and pathological states of liver and other organs in mice. Measurement of several oxidative stress markers from organs of experimental animals. Histopathological studies and microscopical analysis of different organs, Raising of polyclonal antibody against a pure protein in rabbits.

Signal transduction studies like assay of different kinases, various transcription factors etc.

List of Publications

Research articles

1. **Sarkar K,** Ghosh A and Sil PC. Preventive and curative role of a 43 kD protein from the leaves of the herb *Cajanus indicus* L on thioacetamide induced toxicity. Hepatology Research 2005; 33: 39-49. 10.1016/j.hepres.2005.06.007

2. **Sarkar K**, Sarkar MK, Bhattacharjee R, Chatterjee M and Sil PC. Curative role of the aqueous extract of the herb, *phyllanthus niruri,* on nimesulide induced oxidative stress in murine liver. Biomedical Reasearch 2005; 16(3): 171-176.

3. **Sarkar K** and Sil PC. A 43 kD protein from the herb *Cajanus indicus* L. protects thioacetamide-induced cytotoxicity in hepatocytes. Toxicology in Vitro 2006; 20(5): 634-640.

4. **Sarkar K,** Ghosh A, Kinter M, Mazumder B and Sil PC. Purification and characterization of a 43 kD hepatoprotective protein from the herb *Cajanus indicus* L. Protein Journal 2006; 25(6): 411-421.

5. Ghosh A, **Sarkar K** and Sil PC. Effect of a 43 kD protein from the leaves of the herb, *Cajanus indicus* L on chloroform induced hepatic-disorder. Journal of Biochemistry and Molecular Biology 2006; 39(2): 197-207.

6. Chatterjee M, **Sarkar K** and Sil PC. The protein isolate of the herb, *Phyllanthus niruri,* protects liver from nimesulide induced oxidative stress. Pathophysiology 2006; 13(2): 95-102.

7. **Sarkar K** and Sil PC. Attenuation of acetaminophen-induced hepatotoxicity *in vivo* and *in vitro* by a 43 kD protein isolated from the herb, *Cajanus indicus* L. Toxicology Mechanisms and Methods. 2007; 17(6): 305-15.

8. **Sarkar K**, Sil PC. *Cajanus indicus* leaf protein: Beneficial role in experimental organ pathophysiology. A review. Pathophysiology. 2011; 18(4): 295-303.

9. Sarkar D, Mal P, Sinha S, Chakraborty R and **Sarkar K**. Prevention of carbon tetrachloride induced hepatic damage in mice by the probiotic yeast *Saccharomyces boulardii.* IJBPAS. 2013; 2(4): 879-893.

10. Chakraborty R, Ganguly R, Hore P, Nath S and **Sarkar K**. Maltodextrin: a prebiotic of choice for *Lactobacillus plantarum*, but not for *Lactobacillus casei* in combination with antibiotics. International Journal of Probiotics and Prebiotics; 2018; 13(1): 19-24.

11. Ganguly R, Chakraborty R, **Sarkar, K**. Inulin induced co-aggregation of *Sacharomyces boulardii* with potential pathogenic bacteria. International Journal of Probiotics and Prebiotics; 2019; 14: 18–23.

12. **Sarkar K**, Sil P, Nabavi SF, Berindan - Neagoe I, Cismaru A, Nabavi SM, Habtemariam S. Possible Targets and Therapies of SARS-CoV-2 Infection. Mini Reviews in Medicinal Chemistry; 2020: 20(18). 10.2174/1389557520666200807131855

13. Habtemariam S, Nabavi SF, Banach M, Berindan - Neagoe I, **Sarkar K**, Sil P, Nabavi SM. Should we try SARS-CoV-2 Helicase Inhibitors for COVID-19 Therapy? Archives of Medical Research; 2020: 51(7). 733-735. doi: 10.1016/j.arcmed.2020.05.024

14. Shahmohamadnejad S, Nabavi SF, Habtemariam S, **Sarkar K**, Sil P, Dowran R, Nabavi SM. May we target double membrane vesicles and oxysterol-binding protein to combat SARS-CoV-2 infection? Cell Biology International; 2020: 44(9).

15. **Sarkar K** and Sil PC. Potential strategies to target Coronaviruses. Coronavirus Therapeutics – Volume I. Basic Science and Therapy Development, Advances in Experimental Medicine and Biology 1352 10.1007/978-3-030-85109-5. Springer International Publishing. February 2022.

16. Senjuti Banerjee, Bireswar Bhattacharya, **Kasturi Sarkar**. Evaluation of alpha-amylase inhibition activity of three taxa of Sundarbans. J. Botan. Soc. Bengal 77(1): 50-59 (June, 2023), ISSN 0971-2976 © Botanical Society of Bengal, Department of Botany, University of Calcutta, Kolkata 700 019, India West Bengal.

17. Senjuti Banerjee, Sayak Ganguli, **Kasturi Sarkar**. Section A- Research paper Anti-alpha-amylase property of *Avicennia marina*, mangrove plant from Indian Sundarban. Eur. Chem. Bull. June, 2023, 12(Special Issue 7), 478-498

18. Subhrajit Banerjee, Madushmita Hatimuria, Kasturi Sarkar, Joydeep Das, Ashok Pabbathi and Parames C. Sil***.** Recent Contributions of Mass Spectrometry-Based "Omics" in the Studies of Breast Cancer. *Chem. Res. Toxicol.* 2024 Feb 19;37(2):137-180. doi: 10.1021/acs.chemrestox.3c00223. https://doi.org/10.1021/acs.chemrestox.3c00223

19. Sayan Kar, Sagnik Dutta, Shraddha Saha, Kasturi Sarkar, Shreya Chatterjee, Nabanita Giri [d], Parames C. Sil. Evaluation of toxicity and anti-amylase activity of 7, 8 dihydroxy coumarin (Daphnetin), a novel α-amylase blocker *in vitro* and *in vivo.* Toxicology Reports Volume 14, June 2025, 101991

Book

1. Mitra A K & **Sarkar K.** Edited Practical manual of Modern Microbiology; Himalaya Publishing house Pvt. Ltd. Kolkata, 2016.

Book Chapter

1. **Sarkar** K and Sil P C. Infectious lung diseases and Endogenous oxidative stress in the book ,Oxidative Stress in Lung Diseases-Vol 2. Springer Nature, September 2019. DOI: 10.1007/978-981-13-8413-4_7.

2. **Sarkar K** and Sil P. Effect of diet, pharmaceuticals, and environmental toxicants on gut microbiota imbalance and increased intestinal membrane permeability. Toxicological Risk Assessment and Multi-System Health Impacts from Exposure. Pages 403-413, Editor: Aristidis Tsatsakis, Paperback ISBN: 9780323852159, Academic Press, Published Date: August 2021.

3. **Sarkar K** and Sil P C. 'Antioxidants and Immune system' in the Book 'Antioxidants Effects in Health'. 1st Edition, The Bright and the Dark Side, ISBN: 9780128190968, Elsevier, Published date: June, 2022.

4. Teresa Sushmita Adhikari, Subhrajit Banerjee, **Kasturi Sarkar**, Parames C. Sil. Crosstalk of hormones, second messengers, and MAPK in plant defense (2023). In Azamal Husen, Wenying Zhang (Editors) Hormonal cross-talk, plant defense and development' (pp. 335-352) by Academic Press. June, 2023, ISBN:9780323958424, 0323958427

5. Subhrajit Banerjee, Senjuti Banerjee, **Kasturi Sarkar**, and Parames C. Sil. Thevetia peruviana (Yellow Oleander) (chapter 11, pp 307-338) in Exploring Poisonous Plants, CRC press, March 2023. ISBN:9781000834406, 1000834409

6. Senjuti Banerjee, **Kasturi Sarkar**, Parames C Sil. Ethnobotany, phytochemistry, and Pharmacological Activity of *Marsilea minuta*. Aquatic Medicinal Plants. 1st Edition. 2024 CRC Press, Pages 37-48 eBook SBN9781003256830

7. Subhrajit Banerjee, Kasturi Sarkar, PC Sil. Coriander Leaves and Seeds (Coriandrum sativum). Medicinal Spice and Condiment Crops, 2024 CRC Press 225-263

PhD scholars submitted thesis:

1. Ritun Chakraborty
2. Senjuti Banerjee

Resource person

2012-2014: part of the e-content development program of the Microbiology model syllabus prescribed by UGC for undergraduate students from 2012-2014. The program was sponsored by Govt of India and was broadcast in VYAS TV. The programs were produced in Electronic Multimedia Research Centre (EMMRC) Kolkata, St. Xavier's College.

2016-2018: part of the prestigious MHRD program of Govt of India called 'Massive online open-access courses on Microbiology' and the first phase and second phase of the program was completed in 2017 and 2018 respectively. The program was conducted in association with EMMRC, Kolkata and certificates were provided to the successful candidates by St. Xavier's College, Kolkata on the completion of the course.

2022: Resource person in MOOC course on 'Industrial microbiology and Immunology'.

2024: Acted as a resource person in “The Life Sciences Sector Skill Development Council (LSSSDC), Ministry of Skill Development & Entrepreneurship (MSDE)

2025: MOOC course on Immunology