Dr. Kasturi Sarkar

Department: Microbiology

Designation: Assistant Professor

Qualifications: Ph.D (Biochemistry) Calcutta University, 2005

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Personal Information

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

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Title of the Thesis : 'Studies on a hepatoprotective protein from a herbal source'. Purification and characterization of a 43 kD protein from the leaves of the herb *Cajanus indicus* L.

Thesis supervisor : Dr. Parames Chandra Sil Department of Chemistry Bose Institute, Kolkata, India

Current Occupation

Assistant Professor in Department of Microbiology, St Xavier's College, Kolkata, India from July 2006 till date.

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: 2011-2014: DST funded project titled "Synbiotic effect of prebiotic molecules and probiotic yeast *Saccharomyces boulardii* on human health". 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 a number of prebiotic molecules to determine their efficacy on *S. boulardii* growth.
2015- 2017: UGC Minor research Project.

Awards and Fellowships

Graduate Aptitude Test in Engineering (Indian Institute of Technology-KGP), 1999.
National Eligibility Test (Council of Scientific and Industrial Research-INDIA), 1999.
Junior research fellowship, CSIR 2000-2002
Senior research fellowship, CSIR 2002-2005.
Visited Max-Planck Institute for Cellular Biology and Genetics as Guest scientist from 1st September-31st October.

Research Experience

Protein purification : Isolation and purification of a hepatoprotective protein using different ion exchange and gel filtration chromatographies, high performance liquid chromatography (HPLC), SDS-PAGE etc.

***In vitro* studies :** 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.
Some experience of cardiomyocyte stem cell culture.

***In vivo* studies :** Measurement of different marker enzymes related to physiological and pathological states of liver (in swiss albino mice). Measurement of several oxidative stress markers e.g. levels of different antioxidative enzymes, antioxidant molecules, protein carbonylation from liver of experimental animals.
Histopathological studies and microscopical analysis of mice liver.
Raising of polyclonal antibody against a pure protein in rabbits.

Signal transduction studies : Assay of different kinases namely, protein kinase C (PKC), mitogen activated protein kinase (MAP kinase) and various transcription factors like NF-kB, STAT-3 etc., Western blotting.

External Research Funding: Research funding by Scientific and Engineering Research Council, Department of Science and Technology, Govt. of India under the Fast-Track Scheme (2010-13).

List of Publications

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.

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.

8. Sett S, Bhattacharjee D, Mookherji R, Rakib T, **Sarkar K** and A.K. Mitra. Effect of heavy metal contaminated maize on mammalian system. Nature Environment and Pollution Technology. 2008; 7(2): 345-350.

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

10. Debayan Sarkar, Pinky Mal, Saptarshi Sinha, Ritun Chakraborty and **Kasturi Sarkar**. Prevention of carbon tetrachloride induced hepatic damage in mice by the probiotic yeast *Saccharomyces boulardii.* IJBPAS. 2013; 2(4): 879-893.