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ACADEMIA

- **Ph.D.** in Zoology, 2008, Molecular Biology and Cytogenetics lab. University of Kalyani. India
- **M.Sc.** in Zoology, 2004, 70%, (1st Class First) Specialization- Cytogenetics and Molecular Biology. University of Kalyani, India.
- **B.Sc.** (Honours) in Zoology, 2002, 62%, (1st Class First in KN College) University of Kalyani, India.
- **AISSCE**, 1999, 71.%, D.A.V.Model School, West Bengal, India.
- **AISSE**, 1997, 71.5%, D.A.V.Model School, West Bengal, India.

Post Doctoral Research/Work Experience

- **Senior Post Doctoral Researcher**, 2014-2015 (1.5 yrs) in Microbiology and Molecular Medicine, Dept of Clinical and Experimental Medicine, Linköping University, Sweden.
- **Post-Doctoral Researcher**, 2009–2011 (3 yrs). Department of Gastroenterology and Surgical Sciences, University of Padova, Padova, Italy.
- **Senior Post-Doctoral Researcher 2007-2008** (6 months) in Department of Zoology, University of Kalyani (Boiron", Lyon, France sponsored Research Project).

Awards received:

- **Gold medalist-** Received Prof. Bhabes Chandra Bose memorial award for standing First in B.Sc (Zoology) in University of Kalyani.
- **Gold medalist-** Received Prof. Debi Prasad Endowment Gold Medal for standing First class first in M.Sc (Zoology) in University of Kalyani.
- **Gold medalist-** Received Satish and Tulasi Manna Memorial Bronze medal for standing First class first in M.Sc (Zoology) in University of Kalyani.

Research Interest:

Stem Cell Biology/Regenerative Medicine, Toxicology, Molecular Biology, Gastroenterology, Alternative Medicine.

Summary of Research Work :

No of published papers: 22.

<u>Citation indices</u>	All	Since 2011
<u>Citations</u>	311	228
<u>h-index</u>	10	9
<u>i10-index</u>	10	8

Pre and Post doctoral Research Expertise:

- **STEM Cell Culture:** Expertised in isolation and characterization of **Mesenchymal and Hematopoietic Stem Cells isolated from Human umbilical cord and cord blood, human and mouse bone marrow.** Expertised in cell culture and maintenance of various cell lines, CFUFs.
- **Highly Experienced in Flow cytometry analysis (BD Canto) and Cell sorting (BD ARIA II and ARIAIII) and multi colour Flow cytometry.**
- **Genotoxicity testing protocols:** Somatic and meiotic chromosome aberration study of mice, Micronucleus testing, Sperm head anomaly study, study of NOR and C-banding patterns of mice chromosomes.

- **Biochemical studies:** Gel electrophoresis (SDS-PAGE) of proteins, Isolation of DNA, RNA and agarose gel electrophoretic analysis of DNA, Quantitative assay of proteins and enzyme, ELISA, Real time and Quantitative RT-PCR.
- **Immunofluorescence and Immunohistochemistry.**
- **Matrix Metalloproteinase activity testing by Gelatin Zymography.**
- **Western Blot analysis.**
- **Single Cell Gel Electrophoresis (comet assay).**
- **Analytical Studies:**
- Arsenic Estimation of Human Hair, Nail, Blood and Urine By Atomic Absorption Spectrophotometer (GBC, Avanta, Australia and Perkin Elmer, USA).
- **Immunological Studies**
- Determination of Antinuclear Antibody Titer, ds-DNA and Scl-70, α -fetoprotein.
- **Hematological Studies:** Estimation of Glucose, total cholesterol, HDL and LDL-cholesterol, triglyceride, creatinine, urea, bilirubin, albumin, hemoglobin, ESR, PCV lymphocyte viability and hepatic cell viability assay in blood serum of mice and human.
- **Animal Handling:** Certified small Animal Handling for research **from Sweden (LAS course) valid throughout Europe.** Rearing and Maintenance of wild type and **genetically manipulated immunodeficient and knockout** mice and rats.

TECHNICAL SKILLS SET

Scientific writing

- ☐ Vivid experience in writing/reviewing manuscripts, grant proposals, scientific research projects, scientific reports, and abstracts (based on the data from the research), & publications with detailed explanation of the quality of research conducted.
- ☐ Excellent knowledge in analysis, preparation and compilation of data.
- ☐ Experience in statistical analysis for scientific data from research such as **Statistica, GraphPad Prism.**
- ☐ Using Mesh database and software proficiency in doing **Meta-analysis and Systematic review.**
- ☐ Usage of reference manager- Endnote

Publications:

2016:

Antara Banerjee, Hong Qian, Mikael Sigvardsson. Rapid enrichment of murine and human mesenchymal stem cell based on Cd44 depletion. **(Communicated)**

Surajit Pathak, **Antara Banerjee**, Wen-Jian Meng, Suman Kumar Nandy, Madhumala G, Xiao-Feng Sun. TAZ (WWTR1) oncoprotein overexpression in colon cancer cells and its downregulation by γ - radiation **(Communicated)**

2015:

Antara Banerjee, Debora Bizzaro, Patrizia Burra, Rosa Di Liddo, Surajit Pathak, Diletta Arcidiacono, Andrea Cappon, Patrizio Bo, Maria Teresa Conconi, Marika Crescenzi, Claudia, Maria Assunta Pinna, Pier Paolo Parnigotto, Malcom R Alison, Giacomo Carlo Sturniolo, Renata D'Inca and Francesco Paolo Russo. Umbilical cord mesenchymal stem cells modulate dextran sulphate sodium induced acute colitis in immunodeficient mice. **Stem Cell Research & Therapy. 2015; 6(1):79.**

Pathak Surajit, Grillo Alessia, Scarpa Melania, Brun Paola, D'Inca Renata, Nai Laura, **Banerjee Antara**, Cavallo Donatella, Barzon Luisa, Palù Giorgio, Sturniolo Giacomo Carlo, Buda Andrea; Castagliuolo Ignazio. MiR-155 modulates the inflammatory phenotype of intestinal myofibroblasts by targeting SOCS1 in ulcerative colitis **Experimental & Molecular Medicine Experimental & Molecular Medicine (2015) 47, e164; doi:10.1038/emm.2015.21 (Nature Publishing Group).**

2014:

Antara Banerjee, Surajit Pathak, Wen-Jian Meng and Anisur Rahman Khuda-Bukhsh, Is chronic feeding of low dose alcohol hepatotoxic or genotoxic? A time course study in mice. **Nucleus 2014. DOI 10.1007/s13237-014-0120-1.**

2013:

Michielan A, Basso D, Martinato M, Pathak S, **Banerjee A**, Oliva L, Mario P, Sturniolo GC, D'Inca R. Increased antibody response to microbial antigens in patients with Crohn's disease and their unaffected first-degree relatives. **Dig Liver Dis. 2013. S 1590-8658, (13): 19-24.**

2012:

Burra P, Arcidiacono D, Bizzaro D, Chioato T, Di Liddo R, **Banerjee A**, Cappon A, Bo P, Conconi MT, Parnigotto PP, Mirandola S, Gringeri E, Carraro A, Cillo U, Russo FP. Systemic administration

of a novel human umbilical cord mesenchymal stem cells population accelerates the resolution of acute liver injury. **BMC, Gastroenterology. 2012; 12: 88.**

2011:

Khuda-Bukhsh AR, Roy Karmakar S, **Banerjee A**, Banerjee P, Pathak S, Biswas SJ, Haque S, Das D, Boujedaini N, Belon P. A follow-up study on the efficacy of the homeopathic remedy *Arsenicum Album* in volunteers living in high risk arsenic contaminated areas **Evid Based Complement Alternat Med; 2011:129214.**

Barollo M, Medici V, D'Incà R, **Banerjee A**, Ingravallo G, Scarpa M, Patak S, Ruffolo C, Cardin R, Sturniolo GC. Antioxidative potential of a combined therapy of anti TNF α and Zn acetate in experimental colitis, **World J Gastroenterol. 2011; 17(36):4099-103.**

Khuda-Bukhsh AR, **Banerjee A**, Biswas SJ, Karmakar SR, Banerjee P, Pathak S, Guha B, Haque S, Das D, De A, Das D, Boujedaini N. An initial report on the efficacy of a millesimal potency *Arsenicum Album* LM 0/3 in ameliorating arsenic toxicity in humans living in a high-risk arsenic village. **Zhong Xi Yi Jie He Xue Bao. 2011; 9(6):596-604.**

2010:

Banerjee A, Pathak S, Biswas SJ, Roy Karmakar S, Naoual B, Belon P, Khuda-Bukhsh AR (2010). Comparative efficacy of two homeopathic potencies, *Chelidonium Majus* 30C and 200C, in amelioration of induced hepato-toxicity in rats. **Homeopathy 2010; 99(3): 167-76.**

Pathak S, **Banerjee A**, Khuda-Bukhsh AR. Efficacy of *Lycopodium Clavatum* in reducing induced hepatotoxicity and genotoxicity in mice. **Int Journal of Biological and Chemical Science 4(3): 770-781, 2010.**

Antara Banerjee, Roy Karmakar S, Saili Paul, Saiful Hoque, Debarshi Das, Anisur Rahman Khuda-Bukhsh. Efficacy of some homeopathic drugs in modulating different blood parameters in thalassemic patients: A short-term study. **Clinical and Experimental Homeopathy. 2010. 2:1. 1-4.**

2009:

Pathak S, **Banerjee A**, Paul S, Khuda-Bukhsh AR (2009). Protective potentials of a plant extract (*Lycopodium clavatum*) on mice chronically fed Hepato-carcinogens. **Indian Journal of Experimental Biology 2009, 47, 602-607.**

Bhattacharyya SS, Paul S, Mandal SK, **Banerjee A**, Boujedaini N, Khuda-Bukhsh AR (2009). A synthetic coumarin (4-methyl-7 hydroxy coumarin) has anti-cancer potentials against DMBA-induced skin cancer in mice. **Eur J Pharmacol. 2009; 614(1-3): 128-36.**

Pathak S, Roy Karmakar S, **Banerjee A**, Dutta S, Khuda-Bukhsh AR (2009). Combinational homeopathic therapy reduces genotoxicity and cytotoxicity in mice fed carcinogens. **Clinical and Experimental Homeopathy**.1:17.

Anisur Rahman Khuda-Bukhsh, Susanta Roy-Karmakar, **Antara Banerjee**, Pathikrit Banerjee, Surajit Pathak, Surjyo Jyoti Biswas, Saiful Haque, Debarshi Das, Naoual Boujedaini, Philippe Belon. A follow-up study on the efficacy of the homeopathic remedy Arsenicum album in volunteers living in high risk arsenic contaminated areas. **Indian Journal of Research in Homoeopathy**. 2009; 3(2): 43.

2008:

Banerjee A, Biswas R, Pathak S, Naoual B, Belon P, Khuda-Bukhsh AR (2008). Crude extract of turmeric reduces hepato-toxicity and oxidative stress in rats chronically fed carcinogens. **Journal of Complementary and Integrative Medicine**, Vol. 5: 1, Article 34.

Belon P, **Banerjee A**, Roy Karmakar S, Biswas SJ, Chaki Choudhury S, Banerjee P, Das JK, Pathak S, Guha B, Paul S, Bhattacharjee N, Khuda-Bukhsh AR (2007). Homeopathic remedy for arsenic toxicity? Evidence-based findings from a randomized placebo controlled double blind human trial. **Science of the Total Environment** 384: 141–150.

2007:

Banerjee A, Basu Chakrabarty S, Roy-Karmakar S, Chakrabarty A, Biswas SJ, Haque S, Das D, Paul S, Mandal B, Naoual B, Belon P, Khuda-Bukhsh AR (2007). Can Homeopathy Bring Additional Benefits to Thalassemic Patients on Hydroxyurea Therapy? Encouraging Results of a Preliminary Study. **Evidence-Based Complementary and Alternative Medicine**. Doi: 10.1093/ecam/nem161.

Pathak S, Bhattacharjee N, Das JK, Choudhury SC, Roy-Karmakar S, Banerjee P, Paul S, **Banerjee A**, Khuda-Bukhsh AR (2007). Supportive evidences for anti-cancerous potential of an alternative medicine in hepatocarcinogenesis of mice. **Forsch Komplementarmed** 14: 148-156.

Khuda-Bukhsh AR, Belon P, Biswas SJ, Roy-Karmakar S, Banerjee P, **Banerjee A**, Guha B, Das JK, Pathak S, Choudhury SC, Bhattacharjee N (2007). Is An Elevated Antinuclear Antibody Titer In Subjects Living In Two Groundwater Arsenic Contaminated Villages Indicative Of A Time-Dependent Effect Of Arsenic Exposure? **Environmental Science: An Indian Journal** 2(1): <http://esajj.tsijournals.com/ESVol2Iss1.htm>

Anisur R Khuda-Bukhsh, Philippe Belon, Surjyo Jyoti Biswas, Susanta Roy Karmakar, Pathikrit Banerjee, **Antara Banerjee**, Bibhas Guha, Jayanta Kumar Das, Surajit Pathak, Sandipan Chaki Choudhury, Nandini Bhattacharjee. Is an elevated antinuclear antibody titer in subjects living in two groundwater arsenic contaminated villages indicative of a time-dependent effect of arsenic exposure. **Journal of Environmental Science: An Indian Journal, 2007. Volume 2, Issue 1.010-016**

2006:

Belon P, Banerjee P, Chaki Choudhury S, **Banerjee A**, Biswas SJ, Roy Karmakar S, Pathak S, Guha B, Chatterjee S, Bhattacharjee N, Das JK and Khuda-Bukhsh AR (2006). Can administration of potentized homeopathic remedy, Arsenicum Album, alter anti-nuclear antibody (ANA) titer in people living in high risk arsenic contaminated areas? : I. A correlation with certain hematological parameters. ***Evidence-Based Complementary and Alternative Medicine 3(1): 99–107.***

Khuda-Bukhsh AR, Pathak S, Guha B, Roy-Karmakar S Das JK, Banerjee P, Biswas SJ, Mukherjee P, Bhattacharjee N, Choudhury SC, **Banerjee A**, Bhadra S, Mallick P, Chakraborti Mallick J, Mondal B (2005). Can homeopathic arsenic remedy combat arsenic poisoning in human exposed to groundwater arsenic contamination? a preliminary report on first human trial. ***Evidence-Based Complementary and Alternative Medicine 2 (4): 537–548.***

Papers presented in International Conferences and publications:

Banerjee A, Burra P, Di Liddo R, Arcidiacono D, Pathak S, Cappon A, Bo P, Conconi MT, Parnigotto PP, Russo FP, Sturniolo GC, D'Incà R. Ameliorative potentials of human umbilical cord derived mesenchymal stem cells in dextran sulphate sodium induced acute colitis in NOD.CB17-Prkdcscid/J mice. **Presented in Digestive Disease Week, USA, 2011.** Published in ***Gastroenterology, Vol 142, Issue 5, Supplement 1, Page S-719 and Published Digestive Disease Week 2012, May 19-22, San Diego USA.***

Banerjee A, Scarpa M, Pathak S, Burra P, Russo FP, Sturniolo GC, D'Incà R. Inflammatory bowel disease therapies adversely affect fertility in men- A systematic review. **Presented in Digestive Disease Week, USA, 2011** and published in ***Gastroenterology, vol 142, Issue 5, Supplement 1, Page S-259 and Published in Digestive Disease Week 2012, May 19-22, San Diego, USA.***

D Arcidiacono, D Bizzaro, T Chioato, R Di Liddo, **A Banerjee**, A Cappon, P Bo, MT Conconi, PP Parnigotto, S Mirandola, E Gringeri, A Carraro, U Cillo, FP Russo, P Burra. OC-5 Systemic

administration of a novel human umbilical cord mesenchymal stem cells population accelerates the resolution of acute liver injury. **Digestive and Liver Disease. 44. S2-S3.**

Seminars/ Symposium Attended:

- Participated in congress **“Hematopoietic Stem Cell Transplantation for Severe Autoimmune Diseases”**, organized by Istituto Degli Innocenti, Florence, Italy from 19-20 November 2009.
- Participated in **“Gene Testing- A great Challenge in Genetic Health Care”**, organized by Thalassemia Foundation and Institute of Genetic Engineering on 8th May, 2007.

Training:

Successfully completed graduate course work and examination for Handling and usage of Laboratory Animal Sciences (2014) in Linköping University, Sweden.

Participated and successfully completed the 10 days training programme on Recombinant DNA Technology from Madurai Kamaraj University from 20th to 31st December 2007.

SOFT SKILLS

- **Language proficiency-** English (full proficiency), Bengali (full proficiency), Hindi (full proficiency), Elementary Italian and Swedish.
- Teamwork, organizational and presentation skills.