Prof (Dr) Subhrajit Biswas

DIRECTOR, AIMMSCR

Specialization: Cancer Biology, DNA damage Checkpoint pathways, DNA replication, Immunology, Drug Discovery, miRNA Therapeutics &Liver cancer.
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Dr. Subhrajit Biswas completed his PhD in Molecular Pathogenesis from Jawaharlal Nehru University (JNU) in 2004 and was immediately appointed as Scientist Fellow at NIPGR, New Delhi. For post-doctorate, he moved to Medical University of South Carolina, USA in 2005 and worked on DNA damage, checkpoint and replication. In 2009, he moved to Vanderbilt University Medical Center, TN, USA and was awarded with prestigious LTMT grant from NCI, UK as Principal Investigator to dissect the role of Bcl-2 family in hematopoietic stem cells (HSCs). The research findings were presented in Cold Spring Harbor Laboratory and Gordon Research Conferences. Back to India, he joined Institute of Liver and Biliary Sciences (ILBS) as Assistant Professor. His research work unraveled the role of Bcl2 & IAP family proteins in tumorigenesis and macrophage plasticity. He also established the miRNA based therapeutic approach for hepatocellular carcinoma (HCC) and HCC specific cancer stem cells (CSCs). In 2017 he joined AIMMSCR, Amity University where his research focuses on crosstalk among hepatocytes, stellate, endothelial cells and their immune modulation with altered extracellular matrix (ECM) for resolution of fibrogenesis, HCC, cancer relapse and drug resistance.

Current Ongoing Research Projects as Principal Investigator (PI) / Coordinator:

1. The Study of SMAC Mimetic as a Potential Therapy in Regression of Fibrosis/ Cirrhosis in Chronic Liver Injury (DBT: BT/PR15011/MED/30/1578) from Department of Biotechnology **(DBT)**
2. Translational approach to inhibit hepatoma cell stemness by altering survival signals to prevent recurrence of carcinogenesis (2019-1306/SCR/ADHOC-BMS) from Indian Council of Medical Research **(ICMR)**
3. Translational approach for reducing Hepatocellular Carcinoma through modulation of extracellular matrix protein Lysyl Oxidase (LOX) in tumor microenvironment (CRG/2018/003918) from Science and Engineering Research Board **(SERB)**
4. Bio-evaluation and Identification of Lead Molecules for Lung and Colon cancer from Selected Medicinal Plants (GIA/2019/001026/PRCG) from ICMR-Department of Health **(DHR)**
5. DST R & D Infrastructure Scheme: FIST Life Science Level II (SR/FST/LS-II/2017/115) Department of Science & Technology **(DST)**

Current Mentoring/Supervision: Current Number of Research Scholars –15 including PhD (Main Guide) – 8, CSIR-SRF– 3, CSIR-JRF– 2, ICMR-SRF– 1, SERB-JRF– 1, UGC-SRF– 1, DBT-SRF– 1, DBT/ Wellcome Trust India Alliance Early Career Fellow - 1

Selected Honours and Awards:

1. Lady Tata Memorial Trust Award from **National Cancer Institute (NCI), United Kingdom (UK)** for 2010-2011 & 2011-2012 as Principal Investigator

2. Award in recognition of '**Excellence in Cancer Research**' at VICC Retreat on "System Biology" at Vanderbilt University Medical Center, USA on 10-05-2011
3. Professional Award for "**Best Use of Research Shared Recourses**", Vanderbilt University Medical Center, USA on 09-03-2010
4. Certified Research Professional for the working with Institutional Animal Care and Use Committee (IACUC) -**American Association for Laboratory Animal Science**(AALAS) since 2009
5. Certified Radiation Safety Professional from **Bhabha Atomic Research Centre (BARC)**, India since 2014

Selected Important Research Publications:

1. Ghufran S M, Sharma S, Ghose S, **Biswas S**[*] (2022). Context-dependent interplay of p53 during interaction of hepatocellular carcinoma and endothelial cells**. Microvascular Research.**142: 104374
2. S Sharma, MS Ghufran, B Das, B Roy, S. Ghose, **S Biswas***(202**1)**. Survivin expression is essential for early activation of hepatic stellate cells and fibrosis progression in chronic liver injury. **Life Sciences-Elsevier** 287:120119**IF: 5.037**
3. I Mukherjee, R Dhar, S Singh, J B Sharma, T C Nag, A R Mridha, P Jaiswal **S Biswas*,** S Karmakar (2021) Oxidative stress-induced impairment of trophoblast function causes Preeclampsia through the unfolded protein response pathway. **Scientific Report-**Nature 16;11(1):18415. **IF: 5.133**
4. Nautiyal N, Maheshwari D, Kumar D, Kumari R, Parasar A, Sharma S, Bihari C, **Biswas S** et al, (2021) Establishment of murine model of Acute-on-Chronic Liver Failure with renal failure. **Hepatology International** doi: 10.1007/s12072-021-10244-0 **IF: 6.048**
5. S Sharma MS Gufran, S Ghose, C. Bihari, **S Biswas*** (2021). Survivin inhibition ameliorates liver fibrosis via inducing senescence in hepatic stellate cells. **Journal of Hepatology** –Elsevier 2021 vol. 75(2) | S389 **IF: 30.08**
6. N Sharma, **S Biswas**, N Al-Dayan AS Alhegaili and M Sarwat (2021) Antioxidant Role of Kaempferol in the Management of Hepatocellular Carcinoma. **Antioxidants** 10(9):1419. doi: 10.3390/antiox10091419 **IF: 6.312**
7. Sharma S, Ghufran S M, Ghose S, **Biswas S***(2021).Cytoplasmic vacuolation with endoplasmic reticulum stress directs sorafenib induced non-apoptotic cell death in hepatic stellate cells.**Scientific Report- Nature***11*: 3089: **IF: 5.133**
8. Roy B, Ghose S, **Biswas S***(2021).Therapeutic strategies for miRNA delivery to reduce hepatocellular carcinoma. **Seminars in Cell & Developmental Biology**26:S1084-9521(21)00079-3**IF: 6.69**
9. Shakeel A, Bhattacharya R, Jeevanandham S, Kochhar D, Singh A, Mehra L, Ghufran M, Garg P, Sangam S, **Biswas S** et al (2019) Graphene Quantum Dots in the Game of Directing Polymer Self-Assembly to Exotic Kagome Lattice and Janus Nanostructures.**ACS Nano**.*13*:9397-9407. **IF: 18.02**
10. Varshney A, Panda JJ, Singh AK, Yadav N, Bihari C, **BiswasS** et al (2018).Targeted delivery of miR-199a-3p using self-assembled dipeptide nanoparticles efficiently reduces hepatocellular carcinoma. **Hepatology***67*, 1392-1407: **IF: 17.42**
11. S Ghose, **S Biswas***, K Datta, RK. Tyagi (2018) Dynamic Hyaluronan drives liver endothelial cells towards angiogenesis. **BMC Cancer**18:648 IF: **4.4**
12. U Sahu, A Choudhury, S Parvez, **S Biswas**, S Kar (2017)Induction of intestinal stemness and tumorigenicity by aberrant internalization of commensal non-pathogenic *E.coli*.**Cell Death & Disease (Nature group)**8(3):e2667. **IF: 10.7**
13. S Sharma, T Kaufmann, **S Biswas*(2017).** Impact of inhibitor of apoptosis proteins on immune modulation and inflammation. **Immunology and Cell Biology (Nature group)** 95(3):236-243. IF: **5.18**
14. **Biswas S**, ShiQ, Wernick A, Aiello A, ZinkelS (2013) TheLossoftheBH3-onlyBcl-2familymemberBiddelaysTcellLeukemogenesisin*Atm*- deficientmice. **Cell Death &Differentiation - Nature***20*(7):869-77 [**EDITORIAL CHOICE]:** IF: **15.8**
15. **Biswas S,** Shi Q, Matisse L, Cleveland S, Dave U, ZinkelS (2010) A Role for Pro-apoptotic Bax and Bak in T- Cell Differentiation and Transformation. **BLOOD** *116*: 5237-5246. IF: **25.67**