Asmita Biswas

RESEARCH INTEREST

Regenerative medicine, organ decellularization, tissue engineering, artificial meat fabrication, 3D printing, biomaterials

EDUCATION

GATE (2018)
GATE score: 645
GATE rank: 183
GATE percentile: 98.7

Masters of Science in Life Science (2016-2018)
National Institute of Technology, Rourkela, India.
CGPA: 8.67

Bachelors of Science in Botany (2013-2016)
Lady Brabourne College, University of Calcutta, Kolkata, India.
Marks Obtained: 70.25%

AISSCE (2013)
Bhavan's Gangabux Kanoria Vidyamandir (Bharatiya Vidya Bhavan), Kolkata, India.
Marks obtained: 92.4%

CBSE (2011)
Bhavan's Gangabux Kanoria Vidyamandir (Bharatiya Vidya Bhavan), Kolkata, India.
CGPA: 10

RESEARCH EXPERIENCE

In-house Dissertation –

Under the guidance of Dr Mohammad Saleem, Membrane Mechanics Lab, National Institute of Technology, Rourkela, India, 2017-2018. My dissertation project deals with Amyloid β-40 aggregation induced changes in fluidity of neuronal membrane mimics. Amyloid β – 40 (Aβ-40) aggregations induce membrane degradation resulting in neural cell death in Alzheimer's disease. Artificial membrane models of Schwann cell membrane and its constituent lipids were synthesized in the form of LUVs and GUVs. The molecular and morphological changes introduced by stress due to Amyloid β-40 aggregation on membrane vesicles were monitored by fluorescence spectrophotometric assay and by using various methods of microscopy like confocal microscope and epifluorescence microscope.

PhD

ACADEMIC PROJETCS AND INTERNSHIPS:

Indian Institute of Chemical Biology (IICB), Kolkata, India (May-July, 2017)
Summer internship under the guidance of Dr Krishnananda Chattopadhyay in a project on "Interaction of KMP - 11 with membrane and the resulting morphological changes due to binding".

Project Details-

Kinetoplastid Membrane protein (KMP-11) is an immunogenic protein expressed on outer as well as inner surface of bilayer membrane of *Leishmania donovani* in the infectious stage. Entry into macrophage occurs by endocytosis resulting in certain interactions between KMP-11 and macrophage bilayer membrane. Binding of KMP-11 mutants with phospholipid membranes composed of DPPC at gel phase was studied using steady state fluorescence and the morphological change of membrane were monitored through red edge excitation shift (REES), FTIR, optical clearance assay and dynamic light scattering (DLS) measurements.

SKILLS AND LAB TECHNIQUES

- 3D printing, gel casting, VPP processing
- Basic *in vitro* study skill set
- Colorimetric estimation of protein and amino acids; Bradford protein assay; Spectral analysis of protein using UV- visible spectrometry, Fourier Transform Infrared Spectroscopy; separation of protein by SDS PAGE.
- Gel electrophoresis, PCR, RT-PCR, qPCR
- Synthesis of artificial membrane vesicles (LUVs, GUVs)

CURRENT DESIGNATION AND YEAR OF JOINING

Senior Research Fellow, July 2019

CURRENT RESEARCH WORK

Bone and muscle-based scaffold fabrication techniques followed by cell seeding leading to fabrication of tissue models.

ACHIEVEMENTS

Still alive

HOBBIES

Reading, cooking, gardening, music and playing with puppies