Curriculum Vitae

Anirban Ganguly

Department of Applied Biology

CSIR- Indian Institute of Chemical Technology

Hyderabad 500007

Email-anirbanganguly39@gmail.com, Mobile -**6289705289**

Education

Institution/University	**Degree**	**Graduation Year**	**Field of Study**
Bangalore University, Bangalore, India	B.Sc	2003	Chemistry, Botany, Biotechnology
Bangalore University, Bangalore, India	M.Sc	2006	Biotechnology
University of Glasgow, Glasgow, UK	M.Res (Master of Research)	2010	Biomedical Science
CSIR Indian Institute of Chemical Technology and Academy of Scientific and Innovative Research, India	PhD	2019	Biological Sciences

Thesis topic Development of novel estrogen receptor mediated anticancer therapeutics and cancer cell detecting fluorescent hybrid molecules.

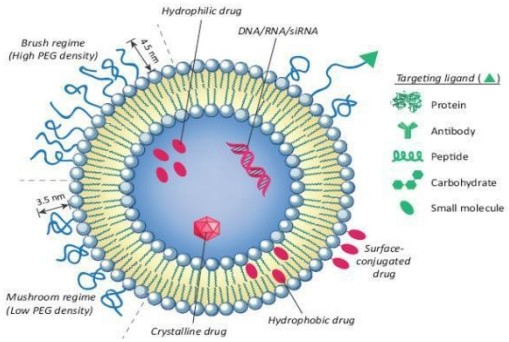
Thesis Supervisor Dr. Rajkumar Banerjee

Research/Training Work Experience

Company/ Institute	**Designation**	**Tenure**
CSIR-Indian Institute of Chemical Technology	Job Contract Fellow	2011-2013
CSIR-Indian Institute of Chemical Technology	Senior Project Fellow	2013-2015
CSIR-Indian Institute of Chemical Technology	CSIR-Senior Research Fellow	2015-2017
Florida A&M University, Tallahassee, Florida, USA	Visiting Research Scholar	2018-2019
IISER Kolkata	Technical Associate Mol Bio	2020-Present

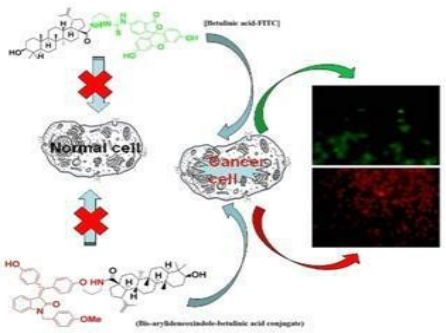
Research Accomplishments- Thesis abstract

- **Liposomal Delivery of potent Active Pharmaceutical Ingredients (APIs)to treat aggressive melanoma** Designed and formulated delivery systems, viz, liposomes for effective encapsulation and solubilization of newly synthesized hydrophobic APIs(e.g. Chemically modified taxane subunits like Docetaxel and isatin based bis-arylidene oxindole derivatives). Evaluated tumor growth inhibition efficacies and also cytotoxicity of these vehicle entrapped hydrophobic drugs *in vitro* (skin cancer cell lines and normal cell lines) and *in vivo*(B16F10 melanoma model in C57BL/6J mice). **Anirban Ganguly et al.** ***J Drug Target. 2018 Jun - Jul; 26(5-6): 481-493.***



- **Identification and recognition of isatin based bis-arylidene oxindole molecules as anti breast cancer agents acting via estrogen receptor** Identified the potential anticancer activity of isatin based bis-arylidene oxindole molecules in human breast cancer cell line MCF-7 which is Estrogen Receptor positive. Screened the bis-arylidene oxindole derivatives in different breast cancer cell lines (MCF-7, MDA-MB-231) and normal cell lines (CHO, HEK 293). Recognized the functional behaviour of the bis-arylidene oxindoles acting via estrogen receptor by estrogen receptor agonistic and antagonistic pre-treatment based studies, siRNA based experiments and ERE gene based studies. Recognized potential Bis-Arylidene oxindole molecules acting as SERM or SERD. **Abhishek Pal, Anirban Ganguly et al.** ***ChemMedChem. 2014 Apr; 9(4):727-732.***

- **Identification of the role of fluorescent based hybrid molecules like betulinic acid- bis arylidene oxindole conjugate as cancer cell detecting agents with potential anti-cancer activity** Established the fluorescent nature of the isatin based bis-arylidene oxindole molecules. Established the cancer cell selective uptake of betulinic acid- bis arylidene oxindole conjugate and simultaneous killing of cancer cells via ROS generation and apoptosis, thus identifying a potential hybrid molecule with dual advantage of cancer cell detection and killing. **Abhishek Pal, Anirban Ganguly et al.** ***ACS Med Chem Lett. 2015 Apr 13; 6(5):612-616.***



Research, lab management and organizing skills

- Development of liposomal nanoparticle drug delivery systems for delivering Active Pharmaceutical Ingredients.
- Preparation of Liposomal nanoparticles (Multilamellar Vesicles- MLVs and Small Unilamellar Vesicles-SUVs) through hydration method, ethanol injection method etc.
- Development of liposomal genetic material (pDNA, siRNA, etc) delivery systems.
- Characterization of liposomes by DLS, ADME *invitro* evaluation of compounds.
- **Culture & maintenance of various primary and secondary animal cell lines such as Astrocytes, Fibroblasts, A549, B16F10, MCF-7, PANC 1, OVCAR 3, VERO, RAW-264.7, COS-1, CHO, HepG2, NIH3T3, HEK 293T, PDX lung etc.; transfection biology; Mini and maxi preparation of plasmids, Bacterial culture; MTT-based cytotoxicity assays, Crystal violet based cytotoxicity assays, Live and Dead assays, proliferation assay, BCA Protein assay, Bradford Assay, Isolation of primary cells from blood, tumor and other tissues and organs, Isolation and characterization of exosomes from mesenchymal stem cells, Isolation and characterization of stem cells, culture and maintenance of stem cells, Cell cycle analysis, apoptosis, mechanistic studies in different signaling pathways of cancer, immunohistochemistry, 3D Cell Culture, live cell imaging etc.**

- **SDS-PAGE-Western blot for characterization of molecular mechanisms of action of small molecules, 2D Gel Electrophoresis, PCR, Flow Cytometry (BD FACS CANTO II, BD Biosciences, US and BD LSR II, BD Biosciences, US with super continuum white light laser sources, Fianium Ltd., Southampton, UK), ESI Mass Spectrometry, Agarose Gel Electrophoresis, Fluorescence microscopy, Confocal microscopy, UV/Vis Spectroscopy, HPLC, ELISA etc.**

Animal Studies

- Bio-distribution studies in C57BL/6J mice after collecting organs and tissues.
- Establishing tumors in C57BL/6J mice with subcutaneous implantation of B16F10 cells, establishing tumors in nude mice (PDX lung tumor models).
- Tumor growth inhibition study by systemic delivery of drugs and Liposomal formulations by i.p. and tail vein injections in mice, PK/PD characterization of compounds, survivability studies.

Human Tissue Handling

- Handling of human tissue samples; Isolation of cells from human tumor samples

Other Skills

- Maintaining animal cell culture facility, flow cytometry instrument, maintaining cell lines, organizing, ordering and arranging different chemicals, glass wares, media bottles, cell culture flasks, petri dishes, well plates and different other biochemical reagents, R and Python Programming Languages, Clinical data analysis, **strong command in English (Speaking, Reading and Writing), familiar with writing style AMA, CSE etc., strong knowledge of computers in MS Word, Excel, Power point**, **experienced in training and teaching fellow lab members and students, writing and reviewing manuscripts of different scientific**

journals , preparation and maintenance of protocols and reports, maintenance of records; good team player, self motivated with energetic approach and detail oriented mindset.

Fellowships Awarded CSIR-SRF (Council of Scientific and Industrial Research- Senior Research Fellowship) in 2015 for PhD.

Other Achievements Poster presentation on N-End Rule pathway in Cancer in International ICCB Conference in 2014 held at CSIR-IICT, Hyderabad, India.

Note Two years of teaching experience as a CSIR-Senior Research Fellow, teaching and guiding Junior PhD and dissertation students.

Publications

1. **Anirban Ganguly**[≠], Harikrishna Reddy Rachamalla[≠], Dwaipayan Bhattacharya, Keerti Bhamidipati, Abhishek Pal, Halley Gora Ravuri, Sumana Chakravarty, Susanta Sekhar Adhikari, Rajkumar Banerjee. Oestrogen receptor-mediated liposomal drug delivery for treating melanoma. **Journal of Drug Targeting, 2018,** ***26(5-6): 481-493.*** ≠ (equal contribution).

2. Abhishek Pal[≠], **Anirban Ganguly**[≠], Abhijit Ghosh, Mohammed Yusuf, Bhowmira Rathore, Rajkumar Banerjee, Susanta Adhikari. Bis-Arylidene oxindoles as anti breast cancer agents acting via estrogen receptor. **ChemMedChem, 2014, 9(4), 727-732.** ≠ (equal contribution).

3. Abhishek Pal[≠], **Anirban Ganguly[≠]**, Sumit Chowdhuri, Mohammed Yusuf, Abhijit Ghosh, Ayan Kumar Barui, Sm Rajesh Kotcherlakota, Susanta Adhikari, Rajkumar Banerjee. Bis-Arylidene oxindole conjugated betulinic acid as a unique fluorescent indicator for selective cancer cell detection, reactive oxygen species generation and cytotoxicity. **ACS Medicinal Chemistry Letters, 2015, 6(5), 612-616.** ≠ (equal contribution).

4. Gullapalli Kumaraswamy, Neerasa Jayaprakash, Dasa Rambabu, **Anirban Ganguly**, Rajkumar Banerjee. Towards the diastereoselective synthesis of 11' epibrevipolide H**. Organic and Biomolecular Chemistry, 2014, 12(11), 1793-1803.**

5. Subrata Pore, Ashwani Choudhary, Bhowmira Rathore, **Anirban Ganguly**, Pombala Sujitha, C. Ganesh Kumar, Sachin Bharat Agawane, Jerald Mahesh Kumar, Vinod Scaria, Beena Pillai, Rajkumar Banerjee. Efficient Hsp90-targeted miRNA-liposomal formulation for systemic antitumor effect. **Biomaterials, 2013, 34(28), 6804-6817.**

6. Sujata Patra, Sudip Mukherjee, Ayan Kumar Barui, **Anirban Ganguly**, Bojja Sreedhar, Chitta Ranjan Patra. Green synthesis, characterization of gold and silver nanoparticles and their potential application for cancer therapeutics. **Science and Materials Engineering C, 2015, 53, 298-309.**

7. Bhowmira Rathore, J.M.M. Chandra Shekhar, **Anirban Ganguly**, R.H. Krishna Reddy, Rajkumar Banerjee. Cationic lipid conjugated hydrocortisone as anti tumor agent. **European Journal of Medicinal Chemistry, 2016, 108, 309-321.**

8. Subrata Pore, **Anirban Ganguly**, Samaresh Sau, Goddeshala Sudhakar, Koteswara Rao Kanugula, Ramesh Ummanni, Srigiridhar Kottamraju, Rajkumar Banerjee. N-End rule pathway inhibitor sensitizes cancer cells to antineoplastic agents by regulating XIAP and RAD21 protein expression. **Journal of Cellular Biochemistry, 2019, doi: 10.1002/jcb.29326.**

References

1. **Dr. Rajkumar Banerjee (Thesis Advisor and Senior Principal Scientist)**

Department of Applied Biology
CSIR- Indian Institute of Chemical Technology
Hyderabad 500 007
India
Phone: +91-40-27191859, Mobile: 9390056096
E-mail: rkbanerjee@yahoo.com;
banerjee@iict.res.in; rkbanerjee.iict@gmail.com

2. **Dr. Arabinda Chaudhuri (Former Chief Scientist –Retired in 2018)**

Department of Applied Biology
CSIR- Indian Institute of Chemical Technology
Hyderabad 500 007
India
Mobile: 9440040582
E-mail: arabindachaudhuri@gmail.com

3. **Dr. Shashivardhan Kalivendi (Principal Scientist)**

Department of Applied Biology
CSIR- Indian Institute of Chemical Technology
Hyderabad 500 007
India
Phone: +91-40-27191865, Mobile: 9490462575
Email: kalivendi@iict.res.in, shasivardhan@yahoo.com

I hereby declare that all the above mentioned information is true to my knowledge and belief.