



Dr. ARGHYA ADHIKARY(Ph.D)

**Assistant Professor,
Department of Life Science and Biotechnology.
Jadavpur University.
Associate Fellow (West Bengal Academy of Science and Technology).**

Email: arghyaa.lifescience@jadavpuruniversity.in, adhikaryarghya@gmail.com

Phone no. 9830428550 (M)

Specialization:

Cancer cell Signalling, microRNA signature and regulation in different Cancer and Cancer Stem cells,
Cancer Nanotherapeutics.

Education

- Ph.D, 2012 Jadavpur University, Kolkata, India
Work pursued at Bose Institute, Kolkata
- M.Sc. in Molecular Biology and Biotechnology, 2006 University of Kalyani, Kalyani, Nadia, India
- B.Sc. in Physiology, 2004, Hooghly Mohsin College, Burdwan University. West Bengal, India.

Research Interest

- Signaling pathways associated with Cancer cell metastasis and apoptosis.
- Deciphering the role of different miRNA signatures in cancer metastasis and apoptosis and identification of specific endosome mediated secretory miRNAs from cancer.
- Elucidation of the role of the miRNA axis in development of cancer stem cells required for maintenance and metastasis of cancer.
- Cancer nano-therapeutics: Design, development, characterization and application of different polymeric, metallic and nonmetallic nano-particles in cancer regression.
- Synthesis and application of targeted nano delivery system loaded with anticancer drug as well as miRNAs.
- Development of improved targeted nano-therapeutics against cancer stem cells.

Awards and Fellowships

- Received 'Sir Nilratan Sircar award for the best P.hD student of the year' of Bose Institute in the year 2011.
- Received the CSIR-RA award from CSIR on January 2013.
- Received the DST INSPIRE Faculty award from DST on February 2013.
- Received the International Travel Grant from ICMR for non ICMR scientists to attend the "World Breast Cancer Conference" at Birmingham, UK in August 2015.
- Designated among the ten (10) most innovative scientist in India in 'Bio Asia Drug Discovery and Innovation Award Programme -2016' at Hyderabad Tech Conference during February 8-10, 2016.
- Elected as an Associate Fellow of West Bengal Academy of Science & Technology (WAST) for the year 2019 for notable contribution in the field of Cancer Research, Nanoscience and Drug delivery.
- Selected and Visited JAPAN in January 2020 under SAKURA SCIENCE PLAN program of Japan Science and Technology dept. for active collaboration with Okayama University related to funding and student exchange program

Experience:

Worked as DST INSPIRE Faculty, Assistant Professor, at Centre for Research in NanoScience and Nanotechnology, University of Calcutta from April 2013 to April 2019.

Worked as Scientist, on Contract at Centre for Research in NanoScience and Nanotechnology, University of Calcutta from April 2019 to August 2022.

Teaching

Course taught:

Taught Basic and Advanced Molecular Biology, Cell Signaling, Cell culture/Tissue Culture Techniques Biochemistry and Application of Nanotechnology in Food at different Departments of University of Calcutta and Kalyani University.

Ph.D Thesis Guidance

Completed Ph.D Students.

1. **Saurav Bhattacharya Completed 2019**

Present Affiliation: Dr. Saurav Bhattacharya, Ph.D.(Tech)

Postdoctoral Fellow,

Hamon Center for Therapeutic Oncology Research,

Division of Digestive and Liver Diseases,

Department of Internal Medicine,

University of Texas Southwestern Medical center,

6000 Harry Hines Blvd.

Dallas, Texas, USA.

He is currently focusing on the application of tetrahedron DNA

nanoparticles as drug delivery vehicles against Pancreatic ductal adenocarcinoma.



2. Manisha Ahir Completed 2019

Present Affiliation:

Postdoctoral Associate,
Department of Radiation Oncology, Baylor College of
Medicine, Houston, Texas, USA

She is currently working on Repurposing Esomeprazole for
the treatment of Scleroderma.



3. Priyanka Upadhyay Completed 2021

Research Associate- I

Oncology Department, IRCH block
All India Institute of Medical Sciences (AIIMS)
Ansari Nagar, New Delhi – 110029
Funding agency: 'DHR'

Currently working on

- Identification of Biomarkers for cancers (Thyroid, Breast, Colon, Ovarian)
- Molecular imaging of apoptosis, cancer metabolism and inflammation
- Cancer drug designing, discovery and delivery (Preclinical trials)
- Molecular imaging of immune cell migration in cancer and inflammation model
- Endocytosis and phagocytosis of apoptotic cells and Amyloid beta in neuronal cells



4. Avijit Ghosh (Worked as Post Doc Fellow in EMR project of DST Nanomission)

Present Job Profile:

Postdoc Research Associate
Department of Chemistry, Iowa State University, Ames, IA 50011, USA.

Area of Expertise:

Polymer Chemistry; Nanoparticles in Catalysis



Present Ph.D Students.

1. Sushmita Sarker

CSIR NET Fellow

Working on miRNA regulation through targeted nanotherapeutics in
Tripple negative Breast Cancer Stem Cells.



2. Mousumi Bhattacharjee

Project Fellow

Working on Elucidation of role of miRNA in controlling drug resistance
in Tripple Negative Breast cancer and it's remedy through
combinatorial drug loaded targeted nanomedicine.



3. Shaswati Saha
 AYUSH EMR Project Fellow
 Working on Extraction of Black Seed Oil, Oral Nano-formulation of the Black seed extract and evaluation of the anticancer activity of the same targeting the miRNA axis.



Patents:

S.No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status
1.	Hyaluronic acid-decorated Thymoquinone-loaded Pluronic® P123-F127 mixed polymer nanoparticles as targeted therapy against Triple Negative Breast Cancer.	Dr. Arghya Adhikary	Application number 201831021395	Pending	Indian patent application/INDIA	Pending
2.	Hyaluronic Acid appended PEG-PLGA coated Quarternized Mesoporous Silica nanoparticles for delivery of miRNAs in TNBC"	Dr. Arghya Adhikary	391982	Granted on 19th February 2019	Indian patent application/INDIA	Granted

Projects

Sl. No.	Title of the Project(s)	Sponsoring Agency	Period	Amount	Status
1.	Targeting p53/p63-miRNA axis to regulate integrin recycling on the membrane: An approach to control the migration of highly metastatic p53-mutated breast cancer cells Investigators Name:- Dr. Arghya Adhikary	DST INSPIRE	5 years Date of Start: 10.04.2013	Rs 35,00,000/-	Completed
2.	Synthesis of amine functionalized mesoporous	Centre for Research in Nanoscience and	2 years Date of start:-	2,00,000/- +	Completed

	silica nanoparticles for delivery of miRNA to cancer cells to restrict cancer metastasis Investigators Name:- Dr. Arghya Adhikary	Nanotechnology (CRNN), University of Calcutta, Seed Funding.	19.06.2014	Fellowship of a JRF/SRF for 3 years.	
3.	Evaluation of the involvement of mir205 in integrin recycling on the membrane and therapeutic delivery of miRNA by nanoparticles to control metastasis of p53-mutated breast cancer. Investigators Name:- Dr. Arghya Adhikary.	DBT	3 years Date of start:- 29.07.2015	25,10,000/-	Completed
4.	Exploration of the therapeutic potential of hyaluronic acid decorated different graphene based nano materials for targeting cancer stem cells: A novel approach aiding cancer therapy. Investigators Name:- Dr. Dipankar Chattopadhyay. CO-Investigators Name:- Dr. Arghya Adhikary.	DBT Nanobiotechnology	1year Date of start:- 23.06.2016	Rs 10,60,000/-	Completed
5.	A therapeutic approach of targeted delivery of miRNAs through nanoparticles to control metastasis of Triple Negative Breast cancer <i>in-vitro</i> and <i>in-vivo</i> . Investigators Name:- Dr. Arghya Adhikary.	DST Nanomission.	3 years Date of start:- January 2017.	Rs 49,97,000/-	Completed
6.	Anti-migratory role of black seed extract (thymoquinone) nanoparticle in triple negative breast cancer cells: Evaluation of Molecular mechanisms via miRNA axis Investigators Name:- Dr. Arghya Adhikary.	Ministry of AYUSH.	3 years Date of start:- February 2018.	Rs 35,36,890/-	Ongoing

Publications

Papers published:

2021-2022

1. Nandi S, **Adhikary A**, Acharya A. Anti-cancer effect of astrakurkurol from a folklore tribal mushroom on human hepatocellular carcinoma cells via mediating cell cycle inhibition, apoptosis, and migration. *Journal of Food Biochemistry*(2021). DOI 10.1111/jfbc.14021 (**Impact Factor 2.720**).
2. Mukherjee S, Ghosh S, Chowdhury S, Gupta P, **Adhikary A**, Chattopadhyay S. Pomegranate Polyphenols Attenuate Inflammation and Hepatic Damage in Tumor-Bearing Mice: Crucial Role of NF- κ B and the Nrf2/GSH Axis. *The Journal of Nutritional Biochemistry* (2021). DOI 10.1016/j.jnutbio.2021.108812 (**Impact Factor 6.048**)
3. Ghosh A, Upadhyay P, Sarker S, Das S, Bhattacharjee M, Bhattacharya S, Ahir M, Guria S, Gupta P, Chattopadhyay S, Ghosh S, Adhikari S, and **Adhikary A** Delivery of novel coumarin–dihydropyrimidinone conjugates through mixed polymeric nanoparticles to potentiate therapeutic efficacy against triple-negative breast cancer. *Biomaterials Science* 9 (16), 5665-5690 (**Impact Factor 7.59**)
4. De D, Upadhyay P, Das A, Ghosh A, **Adhikary A**, Mandal M. Studies on cancer cell death through delivery of dopamine as anti-cancer drug by a newly functionalized cobalt ferrite nano-carrier. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* DOI.org/10.1016/j.colsurfa.2021.127202. (**Impact Factor 4.539**)
5. Mukherjee D, Paul D, Sarker S, Hasan N, Ghosh R, Prasad S, Vemula P, Das R, **Adhikary A**, Pal S, Rakshit T. Polyethylene Glycol-Mediated Fusion of Extracellular Vesicles with Cationic Liposomes for the Design of Hybrid Delivery Systems. *ACS Appl. Bio Mater* (2021). DOI 10.1021/acsabm.1c00804 (**Impact Factor 3.25**).
6. Nandi S, Upadhyay P, Roy A, Dasgupta A, Sen A, **Adhikary A**, Acharya K. A natural derivative from ethnomedicinal mushroom potentiates apoptosis, autophagy and attenuates cell migration, via fine tuning the Akt signaling in human lung adenocarcinoma cells (A549). *Environmental Toxicology* (2021). DOI.org/10.1002/tox.23377 (**Impact Factor 4.119**).
7. Basu A, Upadhyay P, Ghosh A, Bose A, Gupta P, Chattopadhyay S, Chattopadhyay D, **Adhikary A***. Hyaluronic acid grafted metformin loaded graphene oxide nanoparticle as CD44 targeted anti-cancer therapy for triple negative breast cancer. *Biochimica et Biophysica Acta (BBA) - General Subjects* (2021). DOI.org/10.1016/j.bbagen.2020.129841 (**Impact Factor 3.770**).

8. Guria S, Ghosh A, Mishra T, Das M, **Adhikary A**, Adhikari S. X-ray structurally characterized quinoline based fluorescent probes for pH sensing: Application in intracellular pH imaging; DFT calculations and fluorescent labeling. *Journal of Photochemistry and Photobiology A: Chemistry* (2021) DOI:10.1016/j.jphotochem.2020.113074 (**Impact Factor 4.291**)
9. Das B, Basu A, Maji, K, Dewan M, **Adhikary A**, Maiti T K, Chattopadhyay D. Nanotailored hyaluronic acid modified methylcellulose as an injectable scaffold with enhanced physico-rheological and biological aspects. *Carbohydrate Polymers*(2021) DOI:10.1016/j.carbpol.2020.116146 (**Impact Factor 7.182**)
10. Upadhyay P, Ghosh A, Basu A, Pranathi P A, Gupta P, Das S, Sarker S, Bhattacharjee M, Bhattacharya S, Ghosh S, Chattopadhyay S, **Adhikary A***. Delivery of gefitinib in synergism with thymoquinone *via* transferrin-conjugated nanoparticle sensitizes gefitinib-resistant non-small cell lung carcinoma to control metastasis and stemness. *Biomaterials Science* (2021) DOI: 10.1039/d1bm01148k (**Impact Factor 7.59**)

2020

11. Guria S, Ghosh A, Mishra T, Das M K, Adhikari S. X-ray structurally characterized quinoline based fluorescent probes for pH sensing: Application in intracellular pH imaging; DFT calculations and fluorescent labeling. *Journal of Photochemistry and Photobiology A: Chemistry* (2021) DOI:10.1016/j.jphotochem.2020.113074. (**Impact Factor 3.261**)
12. Banerjee A, Das D, Paul R, Roy S, Das U, Saha S, Dey S **Adhikary A**, Mukherjee S, Maji B K. Mechanistic study of attenuation of monosodium glutamate mixed high lipid diet induced systemic damage in rats by *Cocciniagrandis*. DOI:10.1515/jbcpp-2019-0141 (2020). **Scientific Reports**. (Impact Factor **3.998**)
13. Basu A, Upadhyay P, Ghosh A, Bose A, Gupta P, Chattopadhyay S, Chattopadhyay D, **Adhikary A**. Hyaluronic acid engrafted metformin loaded graphene oxide nanoparticle asCD44 targeted anti-cancer therapy for triple negative breast cancer. DOI: 10.1016/j.bbagen.2020.129841 **Biochimica et BiophysicaActa (BBA)-General Subjects**. (Impact Factor **3.422**)
14. Upadhyay P, Bhattacharjee M, Bhattacharya S, Ahir M, **Adhikary A***, and Prasun Patra P. Silymarin-Loaded, Lactobionic Acid-Conjugated Porous PLGA Nanoparticles Induce Apoptosis in Liver Cancer Cells. *Applied Bio Materials* (2020). DOI: 10.1021/acsabm.0c00987. (Impact Factor 0.657)
15. S Guria, A Ghosh, P Upadhyay, M Das, T Mishra, A Adhikary, S **Adhikari A**. Small-molecule probe for sensing serum albumin with consequential self-assembly as a fluorescent organic nanoparticle

for bioimaging and drug-delivery applications. **ACS Applied Bio Materials** (2020) DOI: 10.1021/acsabm.0c00146.(**Impact Factor**. 0.657)

16. Saha J, Sarkar D, Pramanik A, Mahanti K, **Adhikary A**, Bhattacharyya S. PGE2-HIF1 α reciprocal induction regulates migration, phenotypic alteration and immunosuppressive capacity of macrophages in tumor microenvironment. **Life Science Alliance**. (2020) DOI: 10.1016/j.lfs.2020.117731 (**Impact Factor**. 1.572)
17. Dewan M, Dutta K, Rana D, Basu A, Bhattacharya A, **Adhikary A**, Dipankar Chattopadhyay D. Effect of tamarind seed polysaccharide on thermogelation property and drug release profile of poloxamer 407-based ophthalmic formulation. **New Journal of Chemistry**. (2020) DOI: 10.1039/D0NJ02767G. (**Impact Factor**. 3.288)
18. Pramanik P, Das S, **Adhikary A**, Roy Chaudhuri C, Bhattacharyya A. Design and implementation of water purification system based on deep ultraviolet light emitting diodes and a multi-pass geometry reactor. **J Water Health**. (2020) DOI: 10.2166/wh.2020.008. (**Impact Factor**. 1.349)
19. Ghosh S, Choudhury S, Chowdhury O, Mukherjee S, Das A, Sain A, Gupta P, **Adhikary A**, Chattopadhyay S. Inflammation-induced behavioral changes is driven by alterations in Nrf2-dependent apoptosis and autophagy in mouse hippocampus: Role of fluoxetine. **Cellular Signalling** (2020) DOI: 10.1016/j.cellsig.2019.109521. (**Impact Factor**. 3.968)
20. Bhattacharjee M, Upadhyay P, Sarker S, Basu A, Das S, Ghosh A, Ghosh S, **Adhikary A***. Combinatorial therapy of Thymoquinone and Emodin synergistically enhanced apoptosis, attenuate cell migration and reduce stemness efficiently in breast cancer. **Biochimica et Biophysica Acta (BBA) - General Subjects**. DOI: 10.1016/j.bbagen.2020.129695. (**Impact Factor**. 3.442)
21. Bhattacharya S, Ghosh A, Maiti S, Ahir M, Debnath G H, Gupta P, Bhattacharjee M, Ghosh S, Mukherjee P, Chattopadhyay S, **Adhikary A***. Delivery of thymoquinone through hyaluronic acid-decorated mixed Pluronic[®] nanoparticles to attenuate angiogenesis and metastasis of triple-negative breast cancer. **Journal of controlled release**. (2020) DOI: 10.1016/j.jconrel.2020.03.033 (**Impact Factor**. 11.47)
22. Ahir M, Upadhyay P, Ghosh A, Sarker S, Bhattacharya S, Gupta P, Ghosh S, Chattopadhyay S, **Adhikary A***. Delivery of dual miRNA through CD44-targeted mesoporous silica nanoparticle for enhanced and effective Triple-negative breast cancer therapy. **Biomaterials Science**. (2020) DOI: 10.1039/d0bm00015a (**Impact Factor**. 7.59)

23. Khan P, Bhattacharya A, Sengupta D, Banerjee S, **Adhikary A**, Das T. Aspirin enhances cisplatin sensitivity of resistant non-small cell lung carcinoma stem-like cells by targeting mTOR-Akt axis to repress migration. **Scientific Reports** (2019). DOI: 10.1038/s41598-019-53134-0. (**Impact Factor**.3.998)
24. Guha D, Saha T, Bose S, Chakraborty S, Dhar S, Khan P, **Adhikary A**, Das T. Integrin-EGFR interaction regulates anoikis resistance in colon cancer cells. **APOPTOSIS** (2019). DOI: 10.1007/s10495-019-01573-5. (**Impact Factor**. 4.543)
25. Das U, Manna K, **Adhikary A**, Mishra S, Saha K D, Dey R S, Majumder B, Dey S. Ferulic acid enhances the radiation sensitivity of lung and liver carcinoma cells by collapsing redox homeostasis: mechanistic involvement of Akt/p38 MAPK signalling pathway. **Free Radical Research**, (2019). DOI: 10.1080/10715762.2019.1655559. (**Impact Factor**. **2.839**)
26. Upadhyay P, Sarker S, Ghosh A, Gupta P, Das S, Ahir M, Bhattacharya S, Chattopadhyay S, Ghosh S, **Adhikary A***. Transferrin ornamented thymoquinone loaded polymeric nanoparticle furnishes anti-carcinogenic effect in non-small cell lung carcinoma through modulation of the microRNA pathway. **Biomaterials Science**, (2019) DOI: 10.1039/C9BM00912D. (**Impact Factor**. **7.59**)
27. Nandi S, Chandra S, Sikder R, Bhattacharya, S, Ahir, M, Biswal, D, **Adhikary A**, Pramanik N, Lai T, Drew M, Acharya K. Characterization and inception of a triterpenoid astrakurkulol, as a cytotoxic molecule on human hepatocellular carcinoma cells, Hep3B. **Journal of Agricultural and Food Chemistry** (2019) DOI: 10.1021/acs.jafc.9b01203. (**Impact Factor**. 4.192)
28. Pramanik N, Bhattacharya S, Rath T, De J, **Adhikary A**, Basu R, Kundu P. Polyhydroxybutyrate-co-hydroxyvalerate copolymer modified graphite oxide based 3D scaffold for tissue engineering application. **Materials Science & Engineering C** (2019). DOI: 10.1016/j.msec.2018.10.009 (**Impact Factor**. 5.88).
29. Mahiuddin M, Banerjee M, Shaikh A, Shyam T, Taniya S, Ghosh A, **Adhikary A**, Brandão P, Félix V, Das D. Optical sensors for detection of nano-molar Zn²⁺ in aqueous medium: Direct evidence of probe- Zn²⁺ binding by single crystal X-ray structures. **Journal of Photochemistry & Photobiology A: Chemistry** (2019). 52–61. (**Impact Factor**. 3.261)
30. Majumdar M, Biswas S C, Choudhury R, Upadhyay P, **Adhikary A**, Roy D N, Misra T K. Synthesis of Gold Nanoparticles Using Citrus macroptera Fruit Extract: Anti-Biofilm and Anticancer Activity. **ChemistrySelect**(2019). DOI: 10.1002/slct.201804021. (**Impact Factor**. 1.716).
31. Guria S, Ghosh A, Manna K, Pal A, **Adhikary A**, Adhikari S. Rapid detection of aspartic acid and glutamic acid in water by BODIPY-Based fluorescent probe: Live-cell imaging and DFT studies. **Dyes and Pigments** (2019). DOI: 10.1016/j.dyepig.2019.04.052. (**Impact Factor**. 4.018).
32. Adhikari S, Ta S, Ghosh A, Guria S, Pal A, Ahir M, **Adhikary A**, Hirad S, Manna P, Das D. A 1,8 Naphthalimide anchor Rhodamine B Based FRET Probe for Ratiometric Detection of Cr³⁺-ion in Living Cells. **Journal of Photochemistry and Photobiology A: Chemistry** (2018).doi.org/10.1016/j.jphotochem.2018.12.010. (**Impact Factor**. 2.891)

33. Basu A, Upadhyay P, Ghosh A, Chattopadhyay D, **Adhikary A***. Folic-Acid-Adorned PEGylated Graphene Oxide Interferes with the Cell Migration of Triple Negative Breast Cancer Cell Line, MDAMB231 by Targeting miR-21/PTEN Axis through NFκB. **ACS Biomaterials Science & Engineering** (2018). (Impact Factor. 4.432).
34. Debnath G, Bhattacharya S, **Adhikary A***, Mukherjee P. Host-sensitized sharp samarium emission from doped titanium dioxide nanoparticles as non-cytotoxic photostable reporters for live-cell imaging. **New Journal of Chemistry** (2018). (Impact Factor.3.201).
35. Roy A, Sarker S, Upadhyay P, Pal A, **Adhikary A**, Jana K, Ray M. Methylglyoxal at metronomic doses sensitizes breast cancer cells to doxorubicin and cisplatin causing synergistic induction of programmed cell death and inhibition of stemness. **Biochemical Pharmacology** (2018). Volume 156, Pages 322-33. (Impact Factor.4.235).
36. Adhikari S, Mandal S, Ghosh A, Guria S, Pal A, Adhikary A, Das D. A FRET based colorimetric and fluorescence probe for selective detection of Bi³⁺ ion and live cell imaging. **Journal of Photochemistry and Photobiology A: Chemistry** (2018). (Impact Factor.2.891).
37. Jana D, Bandyopadhyay S, Upadhyay P, **Adhikary A**, Manna A. Role Of P65 And P53 Expression In Different Stage And Grade Of Ovarian Cancer. **Indian Journal of Applied Research** (2018). (Impact Factor. 2.1652) Citation: 0 S. No. 253 (Impact Factor. 5.397)

2017

38. Bandyopadhyay S, Upadhyay P, **Adhikary A**. Can Mir-34A Expression Is A Prognostic Marker In Different Stage Of Ovarian Cancer? **Journal of Cancer Research & Therapeutics** (2017) Vol. 13, pS152-S152. 1/5p. (Impact Factor. 0.791)
39. Das U, Sengupta A, Biswas S, **Adhikary A**, Dey Sharma R, Chakraborty A, Dey S. Alteration of murine duodenal morphology and redox signaling events by reactive oxygen species generated after whole body γ-irradiation and its prevention by ferulic acid. **Free Radical Research** (2017); Nov 3:1-25. Doi: 10.1080/10715762.2017.1388916. [Epub ahead of print] (Impact Factor. 3.188)
40. Sinha A, Banerjee K, Banerjee A, Sarkar A, Ahir M, **Adhikary A**, Chatterjee M, Choudhuri SK. Induction of apoptosis in human colorectal cancer cell line, HCT-116 by a vanadium- Schiff base complex. **Biomedicine and Pharmacotherapy** (2017); 92:509-518. doi: 10.1016/j.biopha.2017.05.108. [Epub ahead of print] (Impact Factor. 2.326)
41. Roy A, Ahir M, Bhattacharya S, Parida PK, **Adhikary A**, Jana K, Ray M. Induction of mitochondrial apoptotic pathway in triple negative breast carcinoma cells by methylglyoxal via generation of reactive oxygen species. **Molecular Carcinogenesis** (2017) DOI: 10.1002/mc.22665 (Impact Factor. 4.722)
42. Chakraborti S, Chakraborty S, Saha S, Manna A, Banerjee S, **Adhikary A**, Sarwar S, Hazra TK, Das T, Chakraborti P. PEG-functionalized zinc oxide nanoparticles induce apoptosis in breast cancer cells through reactive oxygen species-dependent impairment of DNA damage repair enzyme NEIL2. **Free Radical Biology and Medicine** (2017) <https://doi.org/10.1016/j.freeradbiomed.2016.11.048> (Impact Factor. 5.736)

2015 - 2016

43. Choudhury S, Ghosh S, Mukherjee S, Gupta P, Bhattacharya S, **Adhikary A**, Chattopadhyay S., Pomegranate protects against arsenic-induced p53-dependent ROS-mediated inflammation and apoptosis in liver cells. **The Journal of Nutritional Biochemistry**(2016) DOI: 10.1016/j.jnutbio.2016.09.001 (**Impact Factor**. 4.662)
44. Ray* P, Guha* D, Chakraborty J, Banerjee S, **Adhikary A**, Chakraborty S, Das T. & Sa G. Crocetin exploits p53-induced death domain (PIDD) and FAS-associated death domain (FADD) proteins to induce apoptosis in colorectal cancer. **Scientific Reports** (2016), DOI: 10.1038/srep32979 (**Impact Factor**. 5.578)
45. Chakraborty S, Ghosh S, Banerjee B, Santra A, Bhat J, **Adhikary A**, Chatterjee S, et al. Mephebrindole, a synthetic indole analog coordinates the crosstalk between p38MAPK and eIF2 α /ATF4/CHOP signalling pathways for induction of apoptosis in human breast carcinoma cells. **Apoptosis** (2016), DOI 10.1007/s10495-016-1268-8 (**Impact Factor**. 3.592)
46. Chakraborty A, Debnath G H, Ahir M, Bhattacharya S, Upadhyay P, **Adhikary A*** and Mukherjee P*, Towards the Realization of Luminescence from Visible Emitting Trivalent Lanthanides (Sm, Eu, Tb, Dy) in Polar Zinc Sulfide Nanoparticles: Evaluation of In Vitro Cytotoxicity. **RSC Adv**, (2016) DOI: 10.1039/C6RA03401B (**Impact Factor**. 3.84)

*** Corresponding author as PI.**

47. Chakraborty S, Ghosh S, Banerjee B, Santra A, **Adhikary A**, Misra A K and Sen PC. Phemindole, a synthetic di-indole derivative maneuvers the store operated calcium entry (SOCE) to induce potent anti-carcinogenic activity in human triple negative breast cancer cells **Front. Pharmacol** (2016), doi: 10.3389/fphar.2016.00114 (**Impact Factor**. 3.802)
48. Mukherjee SH, Manna A, Bhattacharjee P, Mazumdar M, Saha S, Chakraborty S, Guha D, **Adhikary A**, Jana D, Gorain M, Mukherjee SA, Kundu GC, Sarkar DK and Das T. Non-migratory tumorigenic intrinsic cancer stem cells ensure breast cancer metastasis by generation of CXCR4+ migrating cancer stem cells **Oncogene** (2016), 1–12. doi:10.1038/onc.2016.26 In press (**Impact Factor**. 8.459)
49. Ahir M, Bhattacharya S, Karmakar S, Mukhopadhyay A, Mukherjee M, Ghosh S, Chattopadhyay S, Patra P, **Adhikary A***. Tailored-CuO-Nanowire decorated with Folic acid mediated coupling of the mitochondrial-ROS generation and miR425-PTEN axis in furnishing potent anti-cancer activity in human triple negative breast carcinoma cells. **Biomaterials**(2016) 76: 115-132 (**Impact Factor**. 15.3)

***Corresponding author as PI**

50. Sardar D, Neogi S. K, Bandyopadhyay S, Satpati B, Ahir A, **Adhikary A**, Jain R, Gopinath C S., Bala T, Multifaceted core-shell nanoparticles: superparamagnetism and biocompatibility **New J. Chem**(2015) DOI: 10.1039/C5NJ01481F. (**Impact Factor**. 3.086)

51. Mukherjee S, Ghosh S, Das DK, Chakraborty P, Choudhury S, Gupta P, **Adhikary A**, Dey S & Chattopadhyay S. Gold-conjugated green tea nanoparticles for enhanced anti-tumor activities and hepatoprotection - synthesis, characterization and in vitro evaluation, *J Nutr Biochem*(2015) 27(7):1398 **(Impact Factor. 4.552)**
52. Patra P, Mitra S, Das Gupta, A, Pradhan S, Bhattacharya S, Ahir M, Mukherjee S, Sarkar, S, Roy S, Chattopadhyay S, **Adhikary A**, Goswami A, Chattopadhyay D. Simple synthesis of biocompatible biotinylated porous hexagonal ZnO nanodisc for targeted doxorubicin delivery against breast cancer cell: in vitro and in vivo cytotoxic potential. *Colloids and Surfaces B: Biointerfaces* (2015) 133: 88–98. **(Impact Factor. 4.152)**
53. Saha S, Mukherjee S, Mazumdar M, Manna A, Khan P, **Adhikary A**, Kajal K, Jana D, Sa G, Mukherjee S, Sarkar DK, Das T. Mithramycin A sensitizes therapy resistant breast cancer stem cells toward genotoxic drug doxorubicin. *Transl Res.* (2015) 165(5):558-77. **(Impact Factor. 3.402)**
54. Ghosh S, Mukherjee S, Choudhury S, Gupta P, **Adhikary A**, Baral R, Chattopadhyay S. Reactive oxygen species in the tumor niche triggers altered activation of macrophages and immunosuppression: Role of fluoxetine. *Cell Signal.* (2015) 27(7):1398-412. **(Impact Factor. 4.315)**
55. Bhattacharya S, Ahir M, Patra P, Mukherjee M, Ghosh S, Mazumdar M, Chattopadhyay S, Das T, Chattopadhyay D, **Adhikary A***. PEGylated-thymoquinone-nanoparticle mediated retardation of breast cancer cell migration by deregulation of cytoskeletal actin polymerization through miR-34a. *Biomaterials* (2015)51:91-107. **(Impact Factor. 15.3)**

***Corresponding author as PI**

56. Ghosh S, **Adhikary A**, Chakraborty S, Bhattacharjee P, Mazumdar M, Putatunda S, Gorain M, Chakraborty A, Kundu GC, Das T, Sen PC. Cross-talk between ER stress and the MEK/ERK pathway potentiates apoptosis in human triple-negative breast carcinoma cells: Role of a dihydropyrimidone, Nifetepimine. *J Biol Chem.* (2015)290(7):3936-49. **(Impact Factor. 4.573)**

2013 - 2014

57. Mukherjee S, Mazumdar M, Chakraborty S, Manna A, Saha S, Khan P, Bhattacharjee P, Guha D, **Adhikary A**, Mukherjee S, Das T. Curcumin inhibits breast cancer stem cell migration by amplifying the E-cadherin/ β -catenin negative feedback loop. *Stem Cell Res Ther.* (2014) 5(5):116. **(Impact Factor. 3.37)**
58. Chakraborty S, Das K, Saha S, Mazumdar M, Manna A, Chakraborty S, Mukherjee S, Khan P, **Adhikary A**, Mohanty S, Chattopadhyay S, Biswas S, Sa G, Das T. Nuclear matrix protein SMAR1 represses c-Fos-mediated HPV18 E6 transcription through alteration of chromatin histone deacetylation. *J Biol Chem.* (2014) 289(42):29074-85. **(Impact Factor. 4.573)**
59. **Adhikary A**, Chakraborty S, Mazumdar M, Ghosh S, Mukherjee S, Manna A, Mohanty S, Nakka KK, Joshi S, De A, Chattopadhyay S, Sa G, Das T. Inhibition of epithelial to mesenchymal transition by E-cadherin up-regulation via repression of Slug transcription and inhibition of E-cadherin

degradation: dual role of scaffold/matrix attachment region-binding protein 1 (SMAR1) in breast cancer cells. *J. Biol Chem* (2014) 289(37): 25431-25444. (Impact Factor. 4.573)

60. Chakraborty S, **Adhikary A**, Mazumdar M, Mukherjee S, Bhattacharjee P, Guha D, Choudhuri T, Chattopadhyay S, Sa G, Sen A, Das T. Capsaicin-induced activation of p53-SMAR1 auto-regulatory loop down-regulates VEGF in non-small cell lung cancer to restrain angiogenesis. *PLoS One*. (2014) 9(6):e99743. (Impact Factor. 3.234)
61. Chakraborty S, Mazumdar M, Mukherjee S, Bhattacharjee P, **Adhikary A**, Manna A, Chakraborty S, Khan P, Sen A, Das T. Restoration of p53/miR-34a regulatory axis decreases survival advantage and ensures Bax-dependent apoptosis of non-small cell lung carcinoma cells. *FEBS Lett*. (2014) 588(4):549-59. (Impact Factor. 3.169)
62. Mohanty S, Saha S, Md S Hossain D, **Adhikary A**, Mukherjee S, Manna A, Chakraborty S, Mazumdar M, Ray P, Das K, Chakraborty J, Sa G and Das T. ROS-PIASy cross talk channelizes ATM signaling from resistance to apoptosis during chemosensitization of resistant tumors *Cell Death Dis*. (2014) 5:e1021. (Impact Factor. 5.014)
63. Mazumdar M*, **Adhikary A***, Chakraborty S, Mukherjee S, Manna A, Saha S, Mohanty S, Dutta A, Bhattacharjee P, Ray P, Chattopadhyay S, Banerjee S, Chakraborty J, Ray A K, Sa G and Das T. Targeting RET to induce medullary thyroid cancer cell apoptosis: An antagonistic interplay between PI3K/Akt and p38MAPK/caspase-8 pathways. *Apoptosis* (2013) 18(5):589-604. (Impact Factor. 3.614)

*These two authors have contributed equally.

64. Mukherjee S, Ghosh S, Choudhury S, **Adhikary A**, Manna K, Dey S, Sa G, Das T, Chattopadhyay S, Pomegranate reverses methotrexate-induced oxidative stress and apoptosis in hepatocytes by modulating Nrf2-NF-κB pathways *J Nutr Biochem* (2013) 24(12):2040–2050. (Impact Factor. 4.592)
65. Chatterjee S, Chakraborty P, Banerjee K, Sinha A, Adhikary A, Das T, Choudhuri SK. Selective induction of apoptosis in various cancer cells irrespective of drug sensitivity through a copper chelate, copper N-(2 hydroxy acetophenone) glycinate: crucial involvement of glutathione. *Biometals*. (2013) 26(3):517-534. (Impact Factor. 2.689)

2012 - 2013

66. Ghosh S, **Adhikary A**, Chakraborty S, Nandi P, Mohanty S, Chakraborty S, Bhattacharjee P, Mukherjee S, Putatunda S, Chakraborty S, Chakraborty A, Sa G, Das T and Sen P.C. Nifetepimine, a dihydropyrimidone, ensures CD4+ T cell survival in tumor micro-environment by maneuvering Sarco(endo)plasmic reticulumCa²⁺ ATPase(SERCA) *J. Biol Chem*(2012)287,39: 32881–32896. (Impact Factor. 4.573)
67. Saha S, **Adhikary A**, Bhattacharjee P, Das T and Sa G. Death by Design: WhereCurcumin Sensitizes Drugresistant Tumours. *Anticancer Res* (2012) 32 (7) 2567‐2584. (Impact Factor. 1.826)

68. Dey Ghosh R, Chakraborty P, Banerjee K, **Adhikary A**, Sarkar A, Chatterjee, Das T, Choudhuri S K. The molecular interaction of a copper chelate with human P-glycoprotein. *Mol Cell Biochem* (2012) 364:309–320. (Impact Factor. 2.388)
69. Chakraborty P, Chatterjee S, Ganguly A, Saha P, **Adhikary A**, Das T, Chatterjee M and Choudhuri S. Reprogramming of TAM toward proimmunogenic type through regulation of MAP kinases using a redox-active copper chelate. *J Leukoc Biol*(2012) 91:609-619. (Impact Factor. 4.304)
70. Saha B*, **Adhikary A***, Ray P, Saha S, Chakraborty S, Mohanty S, Das K, Mukherjee S, Majumder M, Lahiry L, Hossain DMS, Sa G and Das T. Restoration of tumor suppressor p53 by differentially regulating pro- and anti-p53 networks in HPV-18-infected cervical cancer cells. *Oncogene*(2012) 31, 173–186. (Impact Factor. 8.459)

*These two authors have contributed equally.

2010 - 2011

71. Mohanty S, **Adhikary A**, Chakraborty S, Sa G and Das T. Curcumin: Operation 'p53 Hunt' to combat cancer: Theaflavins in action. *Front. Biosci.* (2011) S4, 300‐320. (Impact Factor. 2.484)
72. Chakraborty J, Banerjee S, Ray P, Hossain S, Bhattacharyya S, **Adhikary A**, Chattopadhyay S, Das T and Sa G. Gain of cellular adaptation due to prolong p53 impairment leads to functional switch-over from p53 to p73 during DNA damage in acute myeloid leukemia cells. *J. Biol Chem*(2010) 10.1074;33104-33112. (Impact Factor. 4.573)
73. **Adhikary A**, Mohanty S, Lahiry L, Hossain DMS, Chakraborty S and Das T. Theaflavins retard human breast cancer cell migration by inhibiting NF-kappaB via p53-ROS cross-talk. *FEBS Lett* (2010) 584:7-14. (Impact Factor. 3.169)
74. Lahiry L, Saha B, Chakraborty J, **Adhikary A**, Mohanty S, Hossain DMS, Banerjee S, Das K, Sa G and Das T. Theaflavins target Fas/caspase-8 and Akt/pBad pathways to induce apoptosis in p53-mutated human breast cancer cells. *Carcinogenesis*(2010) 31:259-268. (Impact Factor. 5.334)

2009

75. Chatterjee S, Mookerjee A, MookerjeeBasu J, Chakraborty P, Ganguly A, Adhikary A, Mukhopadhyay D, Ganguli S, Banerjee R, Ashraf M, Biswas J, Das P, Sa G, Chatterjee M, Das T, and Choudhuri S. A Novel Copper Chelate Modulates Tumor Associated Macrophages to Promote Anti-Tumor Response of T Cells. *Plos One* (2009) 4(9): e7048. (Impact Factor. 3.234)