CURRICULUM VITAE

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PERSONAL INFORMATION

Date of Birth : December 07, 1966, Kolkata
Home Address : 61 Rajdanga Chakrabarty Para, Flat No. 6
Kolkata 700107. India
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AREAS OF RESEARCH INTEREST

- Protein-drugs (anti cancer) interaction, drugs discovery from natural and synthetic Compounds, nano particles mediated drug delivery
- Mechanism of anti-cancer drug resistant and its management
- Protein Structure-Function (Tubulin, bacterial cytoskeleton protein FtsZ and its associated proteins of *Vibrio Cholerie*) and screening and development antibacterial agent targeting bacterial cell division proteins FtsZ and FtsA .

ACADEMIC TRANSCRIPT

2015-Present,: Associate Professor, Department. of Biotechnology, University of Calcutta. (01 Dec, 2018 Professorship has been due and waiting for interview.)

2012-2015: Assistant Professor (Reader), Department. of Biotechnology, University of Calcutta

2007-2012: Senior Lecturer, Department. of Biotechnology, University of Calcutta

2003-2007: Lecturer, Department. of Biotechnology, University of Calcutta

2000-2003: Senior Post-Doctoral Research Associate, Prof. K.Trybus,
Dept. of Molecular Physiology and Biophysics,University of Vermont, Burlington, USA.

1997 - 2000 : Post-Doctoral Research Associate, With Prof. R. Himes,
Dept. of Biochemistry,University of Kansas, Lawrence, Kansas, USA.

1992 - 1996 : Ph.D. degree, Biochemistry Department , With
Prof. B.Bhattacharyya, Bose Institute, Calcutta, India,

1988 - 1990 : Master of Science degree in **Chemistry**, with specialization in **Organic Chemistry**, University of Calcutta, June, 1991.

1985 - 1988 : Bachelor of Science degree in **Chemistry Honours (Major)** with Physics & Mathematics as subsidiary subjects, University of Calcutta,.

EXPERIENCE

A. RESEARCH EXPERIENCE:

. Research Contribution:

1.Investigation of Mechanism of Drug-Resistance in Cancer and its Management (Last 5 Years).

The major challenge in front of cancer therapy is the development of chemoresistance. The various factors responsible for development of chemoresistance and we are working to understand which factor(s) are great contribution in initiation of drug-resistance. We are using paclitaxel (taxol, Tx), one of most widely used clinically anticancer drug, which targets microtubules and lung cancer cells (A549) for our model system. Initially we have focused on the chronological changes of various cellular parameters and associated effect on Tx resistance development in A549 cell line. We demonstrated that autophagy played very important role for initiation of role for development Tx resistance (*Datta et al., Tumor Biology 2016*). Next we found that inhibition of autophagy with autophagy inhibitor chloroquine prevented development of paclitaxel resistance in A549 cells with time and potentiated the effect of paclitaxel by increased accumulation of superoxide-producing damaged mitochondria, with elevated ROS generation, it also increased the apoptotic rate and sub G0/ G1 phase arrest with time in A549 cells treated with paclitaxel and attenuated the metastatic potential and cancer stem cell population of the paclitaxel-resistant cells by ROS mediated modulation of the Wnt/β-catenin signaling pathway, thereby increasing paclitaxel sensitivity. ROS here played a crucial role in modulating Akt activity when autophagy process was hindered by chloroquine, excessive ROS accumulation in the cell inhibited Akt activity. In addition, chloroquine pre-treatment followed by taxol (10nM) treatment did not show significant toxicity towards non-carcinomas WI38 cells (lung fibroblast cells). Thus autophagy inhibition by CQ pre-treatment can be used as a fruitful strategy to combat the phenomenon of paclitaxel resistance development as well as metastasis in lung cancer (*Datta et al in "Apoptosis*", 2019).

We also investigated role of miRNA for regulation of autophagy and apoptosis in paclitaxel resistance A549 cells. At first using differential miRNA arrays analysis, we identified miR-17-5p was downregulated in paclitaxel-resistant lung cancer (A549) cells and we demonstrated that miR-17-5p directly bound to the 3'-UTR of Beclin 1, a autophagy modulator. Over-expression of miR-17 sensitized resistant cells to paclitaxel induced cell death by inhibiting BECN1 expression. This is the first reports showing miR-17-5p had an important role to impart paclitaxel resistance in A549 cells trough modulating BECN1 (*Chaterjee et al PLOS ONE 2014, this paper was Top 10% in 2014-2015 in PLOS ONE)*. Next we found that from miRNA array miR-16 was also significantly downregulated in paclitaxel resistant lung cancer cells. We demonstrated that anti-apoptotic protein Bcl-2 was directly targeted miR-16 in paclitaxel resistant lung cancer cells. Moreover, in this report we showed that combined overexpression of miR-16 and miR-17 and subsequent paclitaxel treatment greatly sensitized paclitaxel resistant lung cancer cells to paclitaxel by inducing apoptosis via caspase-3 mediated pathway. Combined overexpression of miR-16 and miR-17 greatly reduced Beclin-1 and Bcl-2 expression respectively (*Chatterjee et al. Cellular Signaling 2015*) .

2.Targeted Anticancer Drug Developmen:Development of anti-tumor agent (lead compounds) from natural compounds targeting tubulin-microtubule system, a major cytoskeleton protein:

My group has been working on development lead compound(s) having antimitotic activity and antitumor activity from natural and synthetic compounds targeting mainly tubulin-microtubule equilibrium. The mechanism action of those compounds have also been established through cell biology and biophysical studies. Some of compounds also used for preclinical animal study and showed very efficacy (Please check the list of publications).

3.Drug (Paclitxel) Delivery Using Solid-Lipid Nanoparticle Through Oral Route
We also working on nanoparticle for delivery of paclitaxel orally efficiently which targets cancer cells and animal model also this oral formulation of pacilitaxel equal effective compare the commercially available paclitaxel nano formulation through intravenous. This formulation also targeted drug-resistance cancer through cancer stem cells (India Patent was filed), Manuscript has been accepted and published in "Nanomedicine-Future medicine").

4. **Study of bacterial cytoskeleton protein FtsZ (*V. cholerae*) and its associated proteins (FtsA) for development of antibacterial agents:**
Recently it has found that bacterial cell division protein FtsZ (homolog to tubulin) which forms Z-ring during bacterial cell division could be a potential target for development of new generation of antibiotics. We have first time cloned FtsZ from *V. cholerae*, purified and characterized and published . We also study interaction between FtsZ and FtsA protein biochemical, biophysical and genetic techniques to understand mechanism of interaction (manuscript communicated) and screening of antibacterial agents are going against Vc-FtsZ and FtsA.

RESEARCH GUIDANCE (SUPERVISOR):

Number of researchers awarded Ph.D degree : 12 (Ph.D.), 1 (MDS-Oral Pathology), 01(Dissertation submitted)

Number of researchers pursuing Ph.D degree: 6

Number of Post-Doctoral Fellow: 01

B1 TEACHING EXPERIENCE (16 YEARS IN POST GRADUATE LEVEL)

Duration	Organization	Area(s)
December, 2003-Present	Biotechnology Dept., Calcutta University (CU) and also took courses at Depts. of Microbiology, Neuroscienc, Genetics and Biochemisrty, . .	Biophysical chemistry : Thermodynamics, Spectroscopic, Protein Chemistry, Protein Engineering, Enzymes (Lab), Cell Biology (Lab)

SPONSORED RESEARCH GRANTS

Sl. No.	Title	Agency	Period/ Status	Amt
1.	Investigation of Role of miRNA in Tubulin Microtubule Targeting Drug Resistance Cancer Cells and its Therapeutic Implications.	Department of Biotechnology. Govt. of India	16-June, 2010 to 15-June-2018,	63.44
2.	Cloning, expression and purification of FtsZ and FtsA of V. *cholerae* and screening of compounds against FtsZ and FtsA for development of novel anti-cholera drug.	West Bengal DBT, Govt. West Bengal	2017-2020	26.00
3.	Study of natural compound Silibinin and its semisynthetic derivatives for development of antibacterial agent against Vibrio cholera and Staphylococcus aureus targeting bacterial cell division protein FtsZ	Twing Project with NIT, Sikkim, Department of Biotechnology. Govt. of India	2018-2021	30.76 (Fund Not received yet)

SPONSORED RESEARCH GRANTS (Completed)

Sl. No.	Title	Agency	Period	Amt in Lakhs
4	Expression of mammalian tubulin in Baculovirus-insects cell system and the elucidation of the mechanism of resistance to some anti-tumor drugs.	Council of Scientific and Industrial Research (CSIR), Govt. Of India	July 01, 2005- Dec 31, 2009	16.73
5	Expression of plasmodium falciparum tubulin in baculovirus-insect cell system for development of anti-malarial drug	Board of Research in Nuclear Sciences/ Department of Atomic Energy (BRNS/DAE), Govt. of India	July 15, 2006-31st March, 2010	14.92
6	Investigation of role tubulin isotypes using expressed individual isotype	Department of Science And Technology, Govt. of India	01-April, 2009 to 31-March , 2012	34.50
7.	Production and characterization of a tubulin-microtubule targeting anti-cancer	Centre for Research in Nanoscience and Nanotechnology, University of Calcutta.	27-Oct-2009 to 26-Oct-2010	2.00

	drug paclitaxel loaded solid lipid nano-particle for delivery through oral route			

AWARDS/HONOURS (Selecetd)

- Award of the Junior Research Fellowship by the Council of Scientific and Industrial Research (CSIR), Government of India after qualifying the National Eligibility Test (NET) conducted jointly by CSIR and University Grants Commission (UGC) held in June 1991.
- Award of the Senior Research Fellowship by the CSIR.
- Award of the National Scholarship on the basis of Bachelor of Science Examination.
- Invited speaker in a symposium "Recent Trends in Biotechnology" On March 27, 2006 at Biotechnology Department, Haldia Institutue of Technology, Haldia, WB.
- Invited speaker in a symposium on "Global Challenges In Biology: The Journey From genes To Diseases", on December 18, 2009, West Bengal State University.
- Invited speaker in "Second World Congress in Cancer 2010 (WCC-2010)", 3-5th Sept., 2010,At Kottayam, Kerala.
- Invited speaker in "International Conference on Chemistry of Phytochemicals: Health, Energy and Environ mental Perspective" Nov. 4-6, 2011 at Agra.
- Invited speaker in "3rd International Cancer Research Symposium" , 18-21 December, 2012, Swiss Hotel, Kolkata.
- Delivered a talk in The 73rd Annual Meeting of the Japanese Cancer Association held from September 25 to 27, 2014 in Yokohama, Japan.
- Invited Chairman in a session in 1st Convention, SFE-INDIA " Opportunities in Medicinal Plant Research", at School of Natural Product Studies, Jadavpur University, Kolkata, November 29-30, 2014.
  Invited speaker in symposium organized by Department of Biophysics and Molecular Biology, University of Calcutta, 2017.
- **Act as a group leader for Biomedical Sciences group** (Drug development and nano-based drug delivery) DBT- Calcutta University Interdisciplinary Life Science Programme (2010-2018) , 13.5 Crores (Total Grant).
  Act as Coordinator, DBT-Boost Programme, Department of Biotechnology, Government of west Bengal, 2018-2021
- Act as a member (current) of Ph.D. committee of Dept. of Biotechnology, Calcutta University,

- **Reviewer Job:** Act as a reviewer of manuscript from International Journals: *Nanomedicine* (Elsevier), *Bioorganic and Biomedicinal Chemistry* (Elsevier), *BBA-GEN*(Elsevier), *ABB* (Elsevier), *Journal of Ethanopharmacology* (Elsevier), *ACS Nano* (American Chemical Society), *Food and Chemical Toxicology* (Elsevier), *Toxicology letters* (Elsevier), *Ecotoxicity and Environment safe*ty (Elsevier), *Physical review and Research International* (Science Domain International), *Scientific Reports* (Nature Group), *PLoS ONE, Tumor Biology* (Springer), J. *Cellular Biochemistry* (Wiley), *BMC Biochemistry and BMC Cancer (BMC Group), Oncotarget* (Nature group), *BMC-cancer, BMC-Biochemistry (*BMC part of Springer Nature), *ACS-Omega (*American Chemical Society) , *RSC-Advances (*Royal Society of Chemistry) , *Theranostics* , *Molecular Medicine* (BMC part of Springer Nature) , *Molecular Cancer* (BMC part of Springer Nature), *Exp Lung Res* (Taylor And Francis), *Journal of Drug Targeting (*Taylor And

Francis), *Oncology Letter* (Spandidos Publication), *Exp Physiology* (Wiley) and *J. Mol. Biol*. (Elsevier), *Cell Death and Disease* (Nature Publication) and more.

MEMBERSHIP IN SOCIETY

- Life Membership in Society of Biological Chemists (India).
- Life Membership in Indian Science Congress Association.

AMINISTRATIVE/ PROFESSIONAL EXPERIENCE

- Acted as Head of The Department, Department of Biotechnology, University of Calcutta, From February-May, 2012 , June-July, 2013. And 2015-2017.
- Acting as a Sub-Coordinator of DBT(Govt. of India)- Calcutta University Interdisciplinary Life Science Programme (IPLS) (2010-2015) for building up infrastructure facility of Sophisticated Instruments like Confocal Microscope (with TIRF), AFM, ITC, and State of Art Mass Spectroscopic facility (MALDI-TOF/TOF and LC-MS with 2D-Nano LC) at Calcutta University.
- Acting as a Incharge of Mass Spectroscopic facility in DBT-CU IPLS facility.
- Acting as group leader for Biomedical Sciences group (Drug development and nano-based drug drug delivery) DBT- Calcutta University Interdisciplinary Life Science Programme (2010-2018).
- Coordinator of DBT-Boast III Program Funded by Govt. West Bengal, from 2018-onwards.

PUBLICATIONS (Selected):

1.**Chakrabarti,G**., Sengupta,S., and Bhattachayya, B. (1996), Thermodynamics of Colchicinoid-Tubulin Interactions : Role of B-ring and C-7 substiutent, ***J. Biol. Chem. 271,*** 2897-2901.

2.**Chakrabarti, G**., Kim,S., Gupta, M. L., Barton, J.S., and Himes, R. H. (1999), Stabilization of Tubulin by Deuterium Oxide. ***Biochemistry 38***, 3067-3072.

3.**Chakrabarti,G**., Mejillano,M.R.,Park,Y.H., David G. Vander Velde and Himes,R.H. (2000) The Nucleoside Triphosphate Specificity of Tubulin. ***Biochemistry*** 39, 10269-10274.

8. Acharya, B., Bhattacharyya, B., and **Chakrabarti, G.** (2008) The natural naphthoquinone plumbagin exhibits antiproliferative activity and disrupts the microtubule network through tubulin binding. ***Biochemistry 47,*** 7838-7845 (Highly accessed, appeared as an hot article).

5. Das, A, Bhattacharya, A., and **Chakrabarti, G.** (2009**)** Cigarette smoke extract induces disruption of structure and function of tubulin-microtubule in lung epithelium cells and *in vitro*. ***Chem. Res. Toxicol. (ACS publication)*** **22**, 446-459.

6. Acharya, B. R., Choudhury, D., Das, A. **Chakrabarti, G.** (2009) Vitamin K3 disrupts the microtubule networks by tubulin binding: A novel mechanism of its antiproliferative activity ***Biochemistry 48,*** 6963-6974.

7. Mukherjee, S. Bhattacharyya, B., and **Chakrabarti, G**. (2010) Genistein Perturbs Microtubule Networks through Binding to a Unique Site of Tubulin***. Biochemistry,*** 49, 1702-12.

8. Das, A, Chakrabarty, S, Choudhury, D, and **Chakrabarti G**. (2010) 1,4-Benzoquinone (PBQ) induced toxicity in lung epithelial cells is mediated by the disruption of the microtubule network and activation of caspase-3. ***Chem Res Toxicol.*** 23, 1054-1066.

9. Choudhury, D, Das, A, Bhattacharya, A, and **Chakrabarti, G. (2010)** Aqueous extract of ginger shows antiproliferative activity through disruption of microtubule network of cancer cells. ***Food Chem Toxicol*** 48, 2872-2880.

10. Deb T, Choudhury D, Guin PS, Sahaq MB, and ***Chakrabarti G**, *Das S. (2011) A complex of Co(II) with 2-hydroxyphenyl-azo-2'-naphthol (HPAN) is far less cytotoxic than the parent compound on A549-lung carcinoma and peripheral blood mononuclear cells: Reasons for reduction in cytotoxicity. ***Chem Biol Interact*** *188,* 206-214. [* Joint corresponding authors].

11.Chakrabarty S, Das A, Bhattacharya A, and **Chakrabarti G.** (2011**)** Theaflavins Depolymerize Microtubule Network through Tubulin Binding and Cause Apoptosis of Cervical Carcinoma HeLa Cells. *J Agric Food Chem. 59,* 2040-2048.

12. Acharya B, Bhattacharyya, S., Choudhury, D., and **Chakrabarti, G.** (2011) The microtubule depolymerizing agent naphtazarin induces both apoptosis and autophagy in A549 lung cancer cells. ***Apoptosis 1****6*, 924-939.

13. Chakraborti, S., Das, L., Kapoor, N., Das, A., Dwivedi, V., Poddar, A.**, Chakrabarti, G.,** Janik, M., Basu, G., Panda, D., Chakrabarti, P., Surolia, A., and Bhattacharyya, B. (2011) Curcumin Recognizes a Unique Binding Site of Tubulin. ***J. Med. Chem.*** *54*, 6183–6196.

14..Das, A. , Choudhury, D., Chakrabarty, S., Bhattacharya, A. and **Chakrabarti, G.** (2012) Acenaphthenequinone induces cell cycle arrest and mitochondrial apoptosis *via* disruption of cellular microtubules. ***Toxicol. Res.*** **1**, 171-185 (RSC publication) (one of the Fig Image is in the Cover Page).

15.Choudhury, D., Ganguli, A., Dastidar, DG., Acharya BK., Das, A. and **Chakrabarti, G.** (2013) Apigenin shows synergistic anticancer activity with curcumin by binding at different sites of tubulin. ***Biochimie*** 95, 1297-1309.

16.Choudhury, D., Xavier, LD., Choudhuri, K., John, R., Dasgupta AK., Pradeep, T., **Chakrabarti, G.** (2013) Unprecedented inhibition of tubulin polymerization directed by gold nanoparticles inducing cell cycle arrest and apoptosis. ***Nanoscale***, DOI: 10.1039/c3nr33891f.

17. Sarkar, K., Chatterjee, A., **Chakrabarti, G**., and Kundu, P.P. (2013) Blood compatible N-maleyl chitosan-graft-PAMAM copolymer forenhanced gene transfection. ***Carbohydrate Polymers 98,*** 598-606.

18. Das, A., Bhattacharyya, A., Chakrabarty, S., Ganguli, A., and **Chakrabarti, G.** (2013) Smokeless Tobacco Extract (STE)-Induced Toxicity in Mammalian Cells is Mediated by the Disruption of Cellular Microtubule Network: A Key Mechanism of Cytotoxicity. ***PLoS ONE*** 8(7): e68224. doi:10.1371/journal.pone.0068224.

19. Bhattacharya , S., Kumar, N.M., Ganguli, A., Tantak, M.P., Kumar, D*., and **Chakrabarti, G.*** (2013) NMK-TD-100, a Novel Microtubule Modulating Agent, Blocks Mitosis and Induces Apoptosis in HeLa Cells by Binding to Tubulin. ***PLoS ONE,*** **8(10):**e76286. doi: 10.1371/journal.pone.0076286

.20. Chakraborti S, Dhar G, Dwivedi V, Das A, Poddar A, **Chakrabarti G**, Basu G, Chakrabarti P, Surolia A, Bhattacharyya B. Stable and potent analogues derived from the modification of the dicarbonyl moiety of curcumin. ***Biochemistry 52***, 7449-60, (2013).

21..Acharya, B.R., Chatterjee, A., Ganguli, A., Bhattacharya, S., and **Chakrabarti G**. Thymoquinone inhibits microtubule polymerization by tubulin binding and causes mitotic arrest following apoptosis in A549 cells. ***Biochimie, , 97,*** 78-91**. (2014).**

22.-Arnab Ganguli, Diptiman Choudhury and **Gopal Chakrabarti**. 2-4 dichlorophenoxyacetic acid induced in toxicity in lung cells by disruption of the tubulin-microtubule network. ***Toxicology Research*** 3, 118-131 **(**2014).

23.Ganguli A, Choudhury D, Datta S, Bhattacharya S, **Chakrabarti G.** Inhibition of autophagy by chloroquine potentiates synergistically anti-cancer property of artemisinin by promoting ROS dependent apoptosis, ***Biochimie 107***, 338-349 (2014).

24.Chatterjee, A, Chattopadhyay, D.J., and **Chakrabarti, G.** miR-17-5p Downregulation Contributes to Paclitaxel Resistance of Lung Cancer Cells Through Altering Beclin1 Expression. **PLoS ONE *9(4):***e95716. (2014).

25**..** Chatterjee, A. and Chakrabarti, G. Dimethyl sulphoxide and Ca^{2+} stimulate assembly of Vibrio cholerae FtsZ. ***Biochimie*** *105*, 64-75 (2014).

26 Chatterjee A, Chattopadhyay D, and **Chakrabarti G.** (2015) miR-16 targets Bcl-2 in paclitaxel-resistant lung cancer cells and overexpression of miR-16 along with miR-17 causes unprecedented sensitivity by simultaneously modulating autophagy and apoptosis. ***Cell Signal*** *27,* 189-203, (2015).

27. Chakrabarty S, Ganguli A, Das A, Nag D, and **Chakrabarti G.** (2015) Epigallocatechin-3-gallate shows anti-proliferative activity in HeLa cells targeting tubulin-microtubule equilibrium. ***Chem-Biol Int***. 214, 380-389.

28. Klionsky D ……**Chakrabarti, G**., …… Zughaier SM.(2016) Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). ***Autophagy***. ;12(1):1-222. doi: 10.1080/15548627.2015.1100356.

29. Bhattacharya S, Das A, Datta S, Ganguli A and Chakrabarti, G. (2016) Colchicine induces autophagy and senescence in lung cancer cells at clinically admissible concentration: potential use of colchicine in combination with autophagy inhibitor in cancer therapy. ***Tumor Biology*** DOI 10.1007/s13277-016-4972-7, published online Feb 11, 2016.

29. Ganguli A, Das A, Nag D, Bhattacharya S, and **Chakrabarti, G.,** (2016) Potential role of autophagy in smokeless tobacco extract-induced cytotoxicity and in morin-induced protection in oral epithelial cells. ***Food and Chem Toxi*** *90*, 160-170.

30. Das Mukherjee D, Maruthi K N, Tantak M K, Das A, Ganguli A, Datta S , Kumar D, and **Chakrabarti, G** (2016) Development of Novel Bis(indolyl)-hydrazide-Hydrazone Derivatives as Potent Microtubule-Targeting Cytotoxic Agents against A549 Lung Cancer Cells. ***Biochemistry***, 55,(21), 3020-3035.

31. Nelson VK, Ali A, Dutta N, Ghosh S, Jana M, Ganguli A, Komarov A, Paul S, Dwivedi V, Chatterjee S, Jana NR, Lakhotia SC, **Chakrabarti G**, Misra AK, Mandal SC, Pal M. (2016) Azadiradione ameliorates polyglutamine expansion disease in Drosophila by potentiating DNA binding activity of heat shock factor 1. ***Oncotarget***. 7(48):78281-78296

32. Tantak MP, Mukherjee DD, Kumar A, **Chakrabarti G*,** Kumar D*. (2017) A Facile and Microwave-assisted Rapid Synthesis of 2-Arylamino-4-(3'-indolyl)- thiazoles as Apoptosis Inducing Cytotoxic Agents. ***Anticancer Agents Med Chem*** *17(3),* 442-455.

33. Datta S, Choudhury D, Das A, Das Mukherjee D, Das N, Roy SS, **Chakrabarti G.** (2017) Paclitaxel resistance development is associated with biphasic changes in reactive oxygen species, mitochondrial membrane potential and autophagy with elevated energy production capacity in lung cancer cells: A chronological study. ***Tumour Biol***. 2017 Feb;39(2). doi: 10.1177/1010428317694314.

34. Joshi R, Mukherjee DD, Chakrabarty S, Martin A, Jadhao M, **Chakrabarti G**, Sarkar A, Ghosh SK. (2018) Unveiling the Potential of Unfused Bichromophoric Naphthalimide To Induce Cytotoxicity by Binding to Tubulin: Breaks Monotony of Naphthalimides as Conventional Intercalators .***J Phys Chem B.*** 122(14):3680-3695 .

35. Chauhan J, Dasgupta M, Luthra T, Awasthi A, Tripathy S, Banerjee A, Paul S, Nag D, Chakrabarti S, **Chakrabarti G**, Sen S. (2018) Design, synthesis and biological evaluation of a novel library of antimitotic C_2-aroyl/arylimino tryptamine derivatives that are also potent inhibitors of indoleamine-2, 3-dioxygenase (IDO). ***Eur J Pharm Sci***.124:249-265.

36. Kaur P, Sharma AK, Nag D, Das A, Datta S, Ganguli A, Goel V, Rajput S, **Chakrabarti G**, Basu B, Choudhury D. (2019) Novel nano-insulin formulation modulates cytokine secretion and remodeling to accelerate diabetic wound healing. ***Nanomedicine.*** 15(1):47-57.

37. Chakrabarty S, Nag D, Ganguli A, Das A, Ghosh Dastidar D, **Chakrabarti G**. (2018) Theaflavin and epigallocatechin-3-gallate synergistically induce apoptosis through inhibition of PI3K/Akt signaling upon depolymerizing microtubules in HeLa cells. ***J Cell Biochem***. doi: 10.1002/jcb.27886.

38. Ghosh Dastidar D and **Chakrabarti G**. (2018) Thermoresponsive Drug Delivery Systems, Characterization and Application. **Book title:** Applications of Targeted Nano Drugs and Delivery Systems: ***Nanoscience and Nanotechnology in Drug Delivery Micro and Nano Technologies,*** 2019, Pages 133-155, Elsevier.

39. Das A, Narayanam MK , Mukherjee P, Ghosh Dastidar D, Ganguli A, Basu B, Chatterji, U, Banerjee S K, Kumar D and **Chakrabarti, G. (2019)** A novel triazole NMK-T-057 induces autophagic cell death in breast cancer cells by inhibiting γ-secretase-mediated activation of Notch-signaling. ***J. Biol. Chem*** ,;294(17):6733-6750. [**JBC send a reorganization as Top 50 papers in March and April in JBC]**

40.Datta S, Choudhury D, Das A, Mukherjee DM, Dasgupta M, Bandopadhyay S, and **Chakrabarti G**. (2019) Autophagy inhibition with chloroquine reverts paclitaxel resistance and attenuates metastatic potential in human non small lung adenocarinoma cells via ROS mediated modulation of β-catenin pathway. ***Apoptosis,*** **DOI 10.1007/s10495-019-**

01526-y. [based on this paper "Nature India" published a report, doi:10.1038/nindia.2019.66 Published online 24 May 2019]

41. Ghosh Dastidar D, Das A, Datta S, Ghosh S, Pal M, Singh Thakur N, Banerjee UC and **Chakrabarti G** . Paclitaxel encapsulated core-shell nanoparticle of cetyl alcohol for active targeted delivery through oral route, ***Nanomedicine (Lond). 2019 Aug;14(16):2121-2150. doi: 10.2217/nnm-2018-0419. Epub 2019 Aug 14.***

42. . Das Mukherjee D, Maruthi K N, Tantak M K, Das A, Datta S , Kumar D, and **Chakrabarti, G** (2020). NMK-BH2, a novel microtubule-depolymerising bis (indolyl)-hydrazide-hydrazone, induces apoptotic and autophagic cell death in cervical cancer cells by binding to tubulin at colchicine – site. ***Biochim Biophys Acta Mol Cell Res***. 2020 Oct;1867(10):118762 doi: 10.1016/j.bbamcr.2020.118762. Epub 2020 Jun 2.

Book Chapter

1 **.** Ghosh Dastidar D and **Chakrabarti G.** (2019) Thermoresponsive Drug Delivery Systems,Characterization and Application, Chapter 6 of Book title "Applications of Targeted Nanodrugs and Delivery Systems". Elsevier Publication. https://doi.org/10.1016/B978-0-12-814029-1.00006-5.

2. Das Mukherjee D, Datta Choudhury S, and **Chakrabarti G**. (2020) Targeting Autophagy in Cancer: Therapeutic Implications, Chapter 12 of Book title "Autophagy in Tumor And Tumor Microenvironment". Springer Publication. ISBN 978-981-15-6929-6 ISBN 978-981-15-6930-2 (eBook) https://doi.org/10.1007/978-981-15-6930-2

Paten Filed,

1. Indian patent filed "Nanoparticle for targeted oral chemotherapy" Inventors : Chakrabarti Gopal, Dastider Debabrata Ghosh, Das Amlan, Paul Mahadev, Invention Number 201831016759, 3rd May 2018. Under Revision after first Reports.

Editorial Board Member of Journal:

2019, Invited and Selected as a Member of the Editorial board of "**Experimental and Therapeutic Medicine."**