School of Pharmacy, Rinker Health Science Campus
Dept of Biomedical & Pharmaceutical Sciences, Chapman University

AYAN KUMAR BARUI, PhD, MRSC

Postdoctoral Fellow

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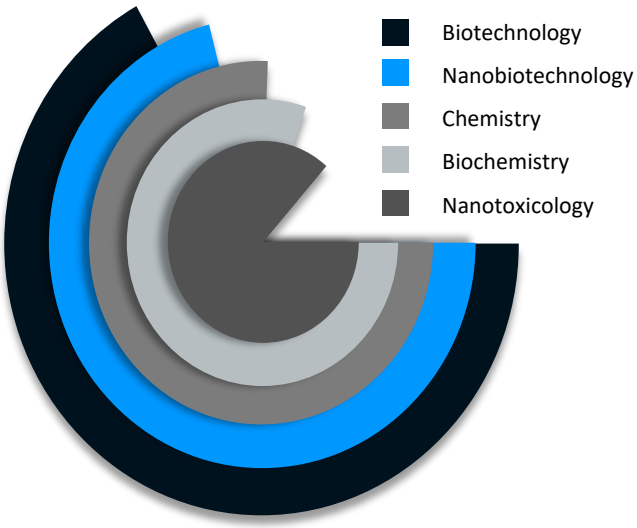
PROFILE SUMMARY

A research professional with 9+ years of total experience which comprises of 5+ years in PhD research and 3+ years in post - PhD research (postdoctoral and industrial experience) with an expertise in leading research and development in the field of chemistry and biotechnology through effectively managing collaborative nanomedicine projects (therapeutics for cancers, cardiovascular diseases, and neurodegenerative diseases as well as bio-imaging). Demonstrated an excellence in leading activities pertaining to laboratory management, mentoring young researchers, manuscript writing, preparation of research grant application and conference presentation as evidenced by 41 peer - reviewed international publications (research article, review, editorial and book chapter) and several international conference awards during doctoral and postdoctoral research journey. Recognized as an invited reviewer for various international journals including Acta Biomaterialia, Nanoscale, Biomaterials Science, JMC-B, MSEC and served as Editorial Board Member of BMC Cancer (Springer Nature) and Topic Editor of MDPI Journals.

SPECIFIC SKILLS



Combine innate personality, strategic planning, tactical initiatives and subject matter expertise to foster exponential growth. Delivered several publications, research and public presentations as a part of achievements. An out-of-the-box thinker with sound product knowledge and thorough understanding of biotechnology in collaboration with other interdisciplinary teams like polymer scientists or synthetic chemists. Proven abilities to enhance the process operations, optimize resource and capacity utilization, escalate productivity and operational efficiencies while curtailing costs and expenses. Abilities in harmoniously managing day - to - day research operations as a team member. Cross-functional expertise in various disciplines including drug design, multi-site synthesis (micro and macro scale) and optimization of small molecules as potential drug candidates. Proven acumen in collaborating with the key decision makers of the organization and achieving consistent success with transferring technology to business for both top - line and bottom - line impact and supporting customer's efforts to make their business units more effective and efficient.

CAREER TIMELINE

Nov 2021 – Present
Postdoctoral Fellow
Chapman University
Irvine, California, USA

Nov 2022 – Present
Visiting Scholar
University of California
Irvine, California, USA

Aug 2020 – Dec 2020
Associate Principal Scientist
Patanjali Research Institute (PRI)
Haridwar, India

Jan 2018 – Mar 2020
Postdoctoral Research Associate
Ulsan National Institute of Science and Technology (UNIST), Ulsan, South Korea

Jan 2012 – Jun 2017
Doctor of Philosophy - Nanobiotechnology
CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad, India

ACADEMIC DETAILS

Jan 2012 - Jun 2017 - Doctor of Philosophy (Ph.D.) - Nanobiotechnology with Distinction (Scored CGPA 8.20) from CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad, India.
Thesis title: Investigation of Bio - Imaging and Anti - Cancer Activities of Different Materials (Luminescent Nanoparticle, BODIPY Probes and Copper Complexes) and Pro - Angiogenic Properties of Zinc Oxide Nanoparticles.

2011 - Master of Science - Chemistry (Organic Specialization) with First Class (Scored 80.25%) from The University of Burdwan, Burdwan, India.
Project title: A Project Report on Polysaccharides of *Enteromorpha*: Isolation and Chemical Investigation.

2009 - Bachelor of Science - Chemistry (Hon.) with First Class (Scored 72.75%) from The University of Burdwan, Burdwan, India.

2006 - 12th with Distinction (Scored 79.9%), WB-Council of Higher Secondary Education.

2004 - 10th with Distinction (Scored 87.25%), WB-BSE.

FUNCTIONAL SKILLS


Molecular Biology


Cancer Therapeutics


Proteomics


Analytical Chemistry


Green Chemistry

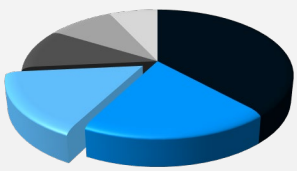

Science

COMPUTER SKILLS

- Microsoft Office
- Image J Analysis
- Origin
- GraphPad Prism
- AngioQuant
- Zen Blue / Black
- Data Analysis
- Statistical Data Analysis

SIGNATURE SKILLS

- Research & Development (R&D)
- Good Laboratory Practice (GLP)
- Project Management
- Academic Publishing
- Academic Writing
- Scientific Writing



CORE COMPETENCIES

Instrumental Skills:

- Multi-photon confocal microscope (ZEISS & Nikon)
- Inverted fluorescence microscope (Nikon & Olympus)
- Stereomicroscope (*Leica*) for CEA/CAM assay
- Light microscope (Labomed) for karyotype test
- Advanced microwave oven (SINEO, Japan) for synthesis of nanoparticles
- Zetasizer / DLS (Malvern)
- Multimode reader (ELISA, luminescence and UV)/ Geldoc
- UV-VIS spectrophotometer/ FT-IR
- FACS analyzer (BD Biosciences)
- IVIS
- Tissue homogenizer / Tissue processor / Microtome
- Lyophilizer

Nanomaterials- Synthesis and Characterizations:

- Synthesize various metal nanoparticles (e.g., zinc oxide, europium hydroxide, terbium hydroxide, gold, silver, etc.)
- Design nanoparticles - based drug delivery systems (DDS)
- Interpretation of different characterization data of nanoparticles and nanoparticles - based DDS using several analytical techniques (e.g., XRD, TEM, SEM, DLS, UV-VIS, FT-IR, TGA, DSC, CHN analyser, etc.)

***In Vitro* Assays:**

- Culture of primary endothelial cell line HUVECs as well as EA.hy926 cells
- Culture of various cancerous (e.g., Neuro-2a, B16F10, A549, A431, MCF7, MDA-MB-231, SKOV-3, SKBR-3, HeLa, HCT-15, Hep G2, etc.) and non-cancerous (e.g., HEK 293, NRK52E, MDCK, CHO, RAW 264.7, COS-1, NIH 3T3, IMR-90, H9C2, LLCPK etc.) cell lines
- 3D cell culture: Multicellular spheroids
- Cell - based assays: ELISA, MTT assay, alamarBlue assay, SRB assay, BrdU proliferation assay, etc.
- Angiogenesis assays: Scratch wound healing assay/ migration assay, Tube formation assay, etc.
- Flow cytometry: Cell cycle analysis, Apoptosis assay, Cellular uptake, etc.
- Determination of neurotrophic / neuritogenic activity
- Confocal microscopy: Determination of ROS, Mitochondrial membrane potential, Cellular uptake, etc.
- Fluorescence microscopy: Cellular bio-imaging, Determination of ROS and NO, etc.
- Enzyme-based assays: Hyaluronidase activity, Collagenase activity, etc.
- Protein quantification: Bradford assay and BCA assay
- Gel electrophoresis / Western Blot / SDS-PAGE
- Immunocytochemistry

***In Vivo* Studies:**

- CEA or CAM assay for angiogenesis study
- *In Vivo* toxicity studies in mice: acute, sub-chronic and chronic toxicity (haematology, serum biochemical analysis, histopathology, etc.) and genotoxicity (monitoring chromosomal aberration, determination of mitotic index, etc.) studies of nanoparticles
- Behavioral studies of rats (with cerebral ischemia/ hind limb ischemia) administered with nanoparticles: adhesive removal test (sensing ability) and open field test (locomotor activity, velocity, grooming activity by hind limb, etc.)
- Establishment of surgical model of aneurysm in mice
- Immunofluorescence / Western Blot / H&E Staining
- PCR: Genotyping of mice
- Mice breeding
- Quantification of serum NO level
- Bio-distribution and excretion/clearance studies of nanoparticles

WORK EXPERIENCE

Chapman University — Irvine, California, USA

- Accountable to manage different nanobiotechnology research projects for the treatment of vascular diseases including aneurysm.
- Synthesis & characterizations of bio-mimetic nanoparticles and development of targeted drug delivery system.

Patanjali Research Institute — Haridwar, India

- Managed different biotechnology projects involving various ayurvedic medicines/formulations.
- Facilitated the characterizations of ayurvedic bhasma particles (nano + micro) employing different analytical techniques.
- Led investigation of wound healing activity and cardio-protective property of different bhasma particles and herbal formulations in vitro.

Ulsan National Institute of Science & Technology — Ulsan, South Korea

- Managed multiple collaborative nanobiotechnology projects for the therapy of cancer and aging as well as mentoring graduate and undergraduate students.
- Secured development of GST-HER2 affibody containing protein corona shielding MOF-808 nanoparticles - based targeted drug delivery system (DDS) for the therapy of cancer with deep tissue penetration.
- Prepared research grant application for National Research Foundation (NRF) of South Korea on the above topic.
- Facilitated the development of Bcl-2 inhibitor as senolytic drug for the therapy of age - related diseases and investigated related in - depth molecular mechanism.

CSIR - Indian Institute of Chemical Technology — Hyderabad, India

- Spearheaded several collaborative nanomedicine and biotechnology based translational research projects for versatile biomedical applications as demonstrated by various peer - reviewed international publications.
- Led investigation of effective cancer theranostic (therapeutic and bio-imaging) potential of silica - based luminescent nanoporous hybrid (LNH-1) material and BODIPY fluorescent probes.
- Developed mesoporous silica nanoparticles as well as green synthesized gold and silver nanoparticles - based DDS for efficient delivery of FDA - approved anti-cancer drugs.
- Identified the anti - cancer and anti - angiogenic properties of copper (II) polypyridyl complexes for the treatment of cancers.
- Synthesized and characterized various inorganic metal nanoparticles including ZnO nanoflowers, europium hydroxide nanorods, terbium hydroxide nanorods and bio-conjugated gold nanoparticles.
- Displayed excellent pro- angiogenic properties of the aforesaid nanoparticles employing several *in vitro* and *in vivo* assays and governed dissection of detailed molecular mechanisms underlying nanoparticles mediated angiogenesis, revealing significant role of ROS, NO and MAPK-Akt-eNOS cell signalling pathways in this process.
- Devised alternative effective treatment strategies for cardiovascular diseases including cerebral ischemia (stroke) and hind limb ischemia (peripheral artery disease) employing neuritogenic, neuro-protective and pro-angiogenic properties of ZnO nanoflowers in rat models.
- Conducted *in vivo* acute, sub-chronic and chronic toxicity as well as genotoxicity studies of pro-angiogenic ZnO nanoflowers in Swiss albino mice revealing their high - biocompatible nature.

LIST OF PUBLICATIONS

A) Articles/Communications (Published):

1. **Barui, A. K.**; Veeriah, V.; Mukherjee, S.; Manna, J.; Patel, A. K.; Patra, S.; Pal, K.; Murali, S.; Rana, R. K.; Chatterjee, S.; Patra, C. R.* Zinc oxide nanoflowers make new blood vessels. ***Nanoscale*** 2012*, 4(24),* 7861-7869. ISI 2021 IF **# 8.307**. [Highlighted in "Nature India", "The Hindu" and "Smart Brief"]
2. Patil, N. T.*; Shinde, V. S.; Thakare, M. S.; Kumar, P. H.; Bangal, P. R.; **Barui, A. K.**; Patra, C. R.* Exploiting the higher alkynophilicity of Au-species: Development of a highly selective fluorescent probe for gold ions. ***Chem. Commun.*** 2012*, 48,* 11229-11231. ISI 2021 IF **# 6.065**.
3. Mukherjee, S.; Sushma, V.; Patra, S.; **Barui, A. K.**; Bhadra, M. P.; Sreedhar, B.; Patra, C. R.* Green chemistry approach for the synthesis and stabilization of biocompatible gold nanoparticles and their potential applications in cancer therapy. ***Nanotechnology*** 2012, *23,* 455103. ISI 2021 IF **# 3.953**. [Highlighted in "Nature India", "The Hindu" and "Global Medical Discovery Alert"]
4. Modak, A.[$]; **Barui, A. K.[$]**; Patra, C. R.*; Bhaumik, A.* A luminescent nanoporous hybrid material - based drug delivery system showing excellent theranostics potential for cancer. ***Chem. Commun.*** 2013*, 49,* 7644-7646. ISI 2021 IF **# 6.065**. [Highlighted in "Nature India"] **[[$]First two authors have equal contribution]**
5. Gayathri, T.[$]; **Barui, A. K.[$]**; Prashanthi, S.; Patra, C. R.*; Singh, S. P.* Meso-Substituted BODIPY fluorescent probes for cellular bio-imaging and anticancer activity. ***RSC Adv.*** 2014, *4*, 47409-47413. ISI 2021 IF **# 4.036**. **[[$]First two authors have equal contribution]**
6. Chereddy, N. R.*; Krishnan, S.; **Barui, A. K.**; Patra, C. R.*; Vaidya J. R.*; Thennarasu, S.* Donor atom selective coordination of Fe^{3+} and Cr^{3+} trigger fluorophore specific emission in a rhodamine–naphthalimide dyad. ***RSC Adv.*** 2014, *4*, 24324-24327. ISI 2021 IF **# 4.036**.
7. Wei, P-F.; Zhang, L.; Nethi. S. K.; **Barui, A. K.**; Lin, J.; Zhou, W.; Shen, Y.; Mana, N.; Zhang, Y-J.; Xu, J.; Patra, C. R.*; Wen, L-P.* Accelerating the clearance of mutant huntingtin protein aggregates through autophagy induction by europium hydroxide nanorods. ***Biomaterials*** 2014, *35(3)*, 899-907. ISI 2021 IF **# 15.304**.
8. Nethi, S. K.; Mukherjee, S.; Veeriah, V.; **Barui, A. K.**; Chatterjee, S.; Patra, C. R.* Bioconjugated gold nanoparticles accelerate the growth of new blood vessels through redox signalling. ***Chem. Commun.*** 2014, *50*, 14367-14370. ISI 2021 IF **# 6.065**. [Highlighted in "Nature India" and "Hindustan Times"]
9. Nagababu, P.[$],*; **Barui, A. K.[$]**; Thulasiram, B.[$]; Devi, C. S.; Satyanarayana, S.; Patra, C. R.*; Sreedhar, B.* Antiangiogenic activity of mononuclear copper(II) polypyridyl complexes for the treatment of cancers. ***J. Med. Chem.*** 2015, *58*, 5226-5241. ISI 2021 IF **# 8.039**. **[[$]First three authors have equal contribution]**
10. Adela, R.; Nethi, S. K.; Bagul, P. K.; **Barui, A. K.**; Mattapally, S.; Kuncha, M; Patra, C. R.; Reddy, P. N. C.; Banerjee, S. K.* Hyperglycaemia enhances nitric oxide production in diabetes: A study from south Indian patients. ***Plos One*** 2015, *10(4)*, e0125270. ISI 2021 IF **# 3.752**.

11. Pal, A.; Ganguly, A.; Chowdhuri, S.; Yousuf, M.; Ghosh, A.; **Barui, A. K.**; Kotcherlakota, R.; Adhikari, S.*; Banerjee, R.* Bis-arylidene oxindole-betulinic acid conjugate: A fluorescent cancer cell detector with potent anticancer activity. ***ACS Med. Chem. Lett.*** 2015, *6*, 612-616. ISI 2021 IF **# 4.632**.
12. Nethi, S. K.; Veeriah, V.; **Barui, A. K.**; Rajendran, S.; Mattapally, S.; Misra, S.; Chatterjee, S.*; Patra, C. R.* Investigation of molecular mechanisms and regulatory pathways of pro-angiogenic nanorods. ***Nanoscale*** 2015, *7*, 9760-9770. ISI 2021 IF **# 8.307**.
13. Kulhari, H.; Pooja, D.; Shrivastava, S.; Telukutala, S. R.; **Barui, A. K.**; Patra, C. R.; Vegi, G. M. N.; Adams, D. J.; Sistla, R.* Cyclic-RGDfK peptide conjugated succinoyl-TPGS nanomicelles for targeted delivery of docetaxel to integrin receptor over-expressing angiogenic tumours. ***Nanomedicine: Nanotechnology, Biology, and Medicine*** 2015, *11*, 1511-1520. ISI 2021 IF **# 6.458**.
14. Patra, S.; Mukherjee, S.; **Barui, A. K.**; Ganguly, A.; Sreedhar, B.; Patra. C. R.* Green synthesis, characterization of gold and silver nanoparticles and their potential application for cancer therapeutics. ***Mater. Sci. Eng. C*** 2015, *53*, 298-309. ISI 2021 IF **# 8.457**.
15. Mukherjee, S.; Sreeram, P.; **Barui, A. K.**; Nethi, S. K.; Veeriah, V.; Chatterjee, S.; Suresh, K. I.; Patra, C. R.* Graphene oxides show angiogenic properties. ***Adv. Healthc. Mater.*** 2015, *4(11)*, 1722-1732. ISI 2021 IF **# 11.092**. [Highlighted in "Nature India" and "Chemistry Views"]
16. Shaikh, A. C.; Shalini, S.; Vaidhyanathan, R.; Mane, M. V.; **Barui, A. K.**; Patra, C. R.; Venkatesh, Y.; Bangal, P. R.; Patil, N. T.* Identifying solid luminogens through gold-catalysed intramolecular hydroarylation of alkynes. ***Eur. J. Org. Chem.*** 2015, *2015(22)*, 4860-4867. ISI 2021 IF **# 3.261**.
17. Wei, P-F.; Jin, P-P.; **Barui, A. K.**; Hu, Y.; Zhang, L.; Zhang, J-Q.; Shi, S-S.; Zhang, H-R.; Lin, J.; Zhou, W.; Zhang, Y-J.; Ruan, R-Q.; Patra, C. R.*; Wen, L-P.* Differential ERK activation during autophagy induced by europium hydroxide nanorods and trehalose: Maximum clearance of huntingtin aggregates through combined treatment. ***Biomaterials*** 2015, *73*, 160-174. ISI 2021 IF **# 15.304**.
18. Kotcherlakota, R.; **Barui, A. K.**; Prashar, S.; Fajardo, M.; Briones, D.; Rodríguez-Diéguez, A.; Patra, C. R.*; Gómez-Ruiz, S.* Curcumin-loaded mesoporous silica: An effective drug delivery system for cancer treatment. ***Biomater. Sci.*** 2016, *4*, 448-459. ISI 2021 IF **# 7.590**.
19. Bollu, V. S.; **Barui, A. K**.; Mondal, S. K.; Prashar, S.; Fajardo, M.; Briones, D.; Rodríguez-Diéguez, A.; Patra, C. R.*; Gómez-Ruiz, S.* Curcumin-loaded silica-based mesoporous materials: Synthesis, characterization and cytotoxic properties against cancer cells. ***Mater. Sci. Eng. C*** 2016, *63*, 393-410. ISI 2021 IF **# 8.457**.
20. **Barui, A. K.**; Nethi, S. K.; Patra, C. R.* Investigation of the role of nitric oxide driven angiogenesis by zinc oxide nanoflowers. ***J. Mater. Chem. B*** 2017, *5*, 3391-3403. ISI 2021 IF **# 7.571**.
21. **Barui, A. K.**; Das, S.; Soanpet, P.; Sreedhar, B.; Patra, C. R.* Effective delivery of doxorubicin using biologically synthesized gold nanoparticles for cancer therapy. ***J. Indian Chem. Soc.*** 2017, *94*, 1335-1348. ISI 2021 IF **# 0.243**.
22. Nethi, S. K.; **Barui, A. K**.; Bollu, V. S.; B. R. Rao; Patra, C. R.* Pro-angiogenic properties of terbium hydroxide nanorods: Molecular mechanisms and therapeutic applications in wound healing. ***ACS Biomater. Sci. Eng.*** 2017, *3(12)*, 3635-3645. ISI 2021 IF **# 5.395**.
23. Bollu, V. S.[$]; Bathini, T.[$]; **Barui, A. K.**[$]; Roy, A.; Ragi N. C.; Maloth, S.; Sripadi, P.; Sreedhar, B.*; Nagababu, P.*; Patra, C. R.* Design of DNA-intercalators based copper(II) complexes, investigation of their potential anti-cancer activity and sub-chronic toxicity. ***Mater. Sci. Eng. C*** 2019, *105*, 110079. ISI 2021 IF **# 8.457**. **[$First three authors have equal contribution]**
24. Das, S.; Roy, A.; **Barui, A. K.**; Alabbasi, M. M. A.; Kuncha, M.; Sistla, R.; Sreedhar, B.; Patra, C. R.* Anti-angiogenic vanadium pentoxide nanoparticles for the treatment of melanoma and their *in vivo* toxicity study. ***Nanoscale*** 2020, *12*, 7604-7621. ISI 2021 IF # **8.307**.
25. Jeena, M. T.; Lee, S.; **Barui, A. K.**; Jin, S.; Cho, Y.; Hwang, S-W.; Kim. S.*; Ryu, J-H.* Intra-mitochondrial self-assembly to overcome the intracellular enzymatic degradation of l-peptides. ***Chem. Commun.*** 2020, *56*, 6265-6268. ISI 2021 IF **# 6.065**.
26. **Barui, A. K.**[$]; Jhelum, P.[$]; Nethi, S. K.; Das, T.; Bhattacharya, D.; Vinothkumar, B.; Karri, S.; Chakravarty, S.*; Patra, C. R.* Potential therapeutic application of zinc oxide nanoflowers in cerebral ischemia rat model through neuritogenic and neuroprotective properties. ***Bioconjug. Chem.*** 2020, *31*, 895-906. ISI 2021 IF **# 6.069**. **[$First two authors have equal contribution]**
27. **Barui, A. K.**[$*]; Nethi, S. K.[$]; Basuthakur, P.; Jhelum, P.; Bollu, V. S.; Reddy, B. R.; Chakravarty, S.*; Patra, C. R.* Therapeutic angiogenesis using zinc oxide nanoflowers for the treatment of hind limb ischemia in rat model. ***Biomed. Mater.*** 2021, *16*, 044103. ISI 2021 IF **# 4.103**. **[*Corresponding author]**; **[$First two authors have equal contribution]**
28. Nethi, S. K.[$]; **Barui, A. K.**[$]; Jhelum, P.; Basuthakur, P.; Bollu, V. S.; Reddy, B. R.; Chakravarty, S.*; Patra, C. R.* Europium hydroxide nanorods mitigate hind limb ischemia in Wistar rats. ***Adv. Therap.*** 2021, *4*, 2100016. ISI 2021 IF **# 5.003**. **[$First two authors have equal contribution]**
29. Alshammari, Q. A.; Pala, R.; **Barui, A. K.**; Alshammari, S.; Nauli, A. M.; Katzir, N.; Mohieldin, A. M.; Nauli, S. M.* The use of advanced spectral imaging to reveal nanoparticle identity in biological samples. ***Nanoscale*** 2022, *14*, 4065-4072. ISI 2021 IF **# 8.307**. [Featured in the front cover page of the journal "Nanoscale"]

B) Review Articles (Pre- Contracted):

1. Nethi, S. K.[$]; **Barui, A. K.**[$]; Mukherjee, S.[$]; Patra, C. R.* "Engineered nanoparticles for effective redox signaling during angiogenic and anti-angiogenic therapy". ***Antioxid. Redox Signal.*** 2019, *30*, 786-809. ISI 2021 IF **# 7.468**. **[$First three authors have equal contribution]**
2. **Barui, A. K.**[$]; Nethi, S. K.[$]; Haque, S.; Basu Thakur, P.; Patra, C. R.* "Recent development of metal nanoparticles for angiogenesis study and their therapeutic applications". ***ACS Appl. Bio Mater.*** 2019, *2*, 5492-5511. **[$First two authors have equal contribution]**
3. **Barui, A. K.**[$]; Oh, J. Y.[$]; Jana, B.; Kim, C.*; Ryu, J-H.* "Cancer-targeted nanomedicine: overcoming the barrier of protein corona". ***Adv. Therap.*** 2020, *3*, 1900124. ISI 2021 IF **# 5.003**. **[$First two authors have equal contribution]**

C) Book Chapters (Pre- Contracted):

1. Kulhari, H.; Pooja, D.; Shrivastava, S.; Reddy, T. S.; **Barui, A. K.**; Patra, C. R.; Naidu, V. G. M.; Adams, D. J.; Sistla, R.* "Cyclic-RGDfK-directed docetaxel loaded nanomicelles for angiogenic tumor targeting" in "Springer Protocols"; Series title: "Methods in Pharmacology and Toxicology"; Publisher: Humana Press; Copyright holder: Springer Science + Business Media, New York; 2015; DOI: 10.1007/7653_2015_63; ISBN: 978-1-4939-7443-6 (print); ISBN: 978-1-4939-7445-0 (online).
2. **Barui, A. K.**; Kotcherlakota, R.; Bollu, V. S.; Nethi, S. K.;

Patra, C. R.* "Biomedical and drug delivery applications of functionalized inorganic nanomaterials"; Book title: "Biopolymer-Based Composites: Drug Delivery and Biomedical Applications"; Editor: Prof. Sougata Jana, Prof. Sabyasachi Maiti and Prof. Subrata Jana; Publisher: Woodhead Publishing; Copyright holder: Elsevier Ltd., Duxford, UK, Cambridge, USA and Kidlington, UK; 2017; DOI: 10.1016/B978-0-08-101914-6.00011-9; ISBN: 978-0-08-101914-6 (print); ISBN: 978-0-08-101915-3 (online).

3. **Barui, A. K.**; Kotcherlakota, R.; Patra, C. R.* "Medicinal applications of metal nanoparticles"; Book title: "Metal Nanoparticles: Synthesis and Applications in Pharmaceutical Sciences"; Editor: Prof. Sreekanth Thota and Prof. Debbie C. Crans; Publisher: Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany; 2018; DOI: 10.1002/9783527807093.ch5; ISBN: 978-3-527-33979-2.
4. **Barui, A. K.**; Kotcherlakota, R.; Patra, C. R.* "Biomedical applications of zinc oxide nanoparticles"; Book title: "Inorganic Frameworks as Smart Nanomedicines"; Editor: Dr. Alexandru Mihai Grumezescu; Publisher: Elsevier-William Andrew, Copyright holder: Elsevier Inc., Oxford, UK and Cambridge, USA; 2018; DOI: 10.1016/B978-0-12-813661-4.00006-7; ISBN: 978-0-12-813661-4.
5. **Barui, A. K.**; Das, S.; Patra, C. R.* "Biomedical applications of green synthesized metal nanoparticles using Polysaccharides"; Book title: "Functional Polysaccharides for Biomedical Applications"; Editor: Prof. Sougata Jana and Prof. Sabyasachi Maiti; Publisher: Elsevier Inc., 2019; DOI: 10.1016/B978-0-08-102555-0.00010-8.; ISBN: 978-0-08-102555-0.
6. **Barui, A. K.**[$]; Jana, B.[$]; Ryu, J. H.* "An insight into characterizations and applications of nanoparticulate targeted drug delivery systems"; Book title: "Nanotechnology Characterization Tools for Tissue Engineering and Medical Therapy"; Editor: Dr. SSR Kumar Challa; Publisher: Springer Nature, 2019; ISBN: 978-3-662-59596-1. **[[$]First two authors have equal contribution]**
7. **Barui, A. K.**; Roy, A.; Das, S.; Bhamidipati, K.; Patra, C. R.* "Therapeutic applications of graphene oxides in angiogenesis and cancers"; Book title: "Nanoparticles and Their Biomedical Applications"; Editor: Dr. Ashutosh K. Shukla; Springer Nature, 2020; ISBN: 978-981-15-0391-7.
8. Mishra, A.*; Singla, S.; **Barui, A. K.*** "Green synthesis of inorganic nanoparticles and their cancer theranostics applications"; Book title: "Biogenic Nanoparticles for Cancer Theranostics"; Editor: Dr. Chittaranjan Patra *et al.*; Elsevier, 2021; ISBN: 978-012-82-1467-1. **[*Corresponding author]**

D) Editorial:

1. Patra, C. R.*; **Barui, A. K.** Nanoflowers: A future therapy for cardiac and ischemic disease? ***Nanomedicine*** 2013, *8(11)*, 1735-1738. ISI 2021 IF **# 6.096**.

RESEARCH HIGHLIGHTS

No.	Publications	Title of Research Highlight	Highlighted at	Online Publication
1.	Nanotechnology 2012, 23 (45), 455103	Bhringraj leaves make cancer drug carrier	Nature India	Nov 7, 2012
2.	Nanoscale 2012, 4, 7861-7869	Nanoparticles help grow new blood vessels	Nature India	Dec 6, 2012
3.	Nanoscale 2012, 4, 7861-7869	Zinc oxide nanoflowers promote blood vessel growth	Smart Brief	Dec 6, 2012
4.	Nanotechnology 2012, 23 (45), 455103	Green chemistry approach for the synthesis…….. potential applications in cancer therapy	Global Medical Discovery Alert	Dec 15, 2012
5.	Nanoscale 2012, 4, 7861-7869	Nanomaterials show potential for treatment of cardiovascular, ischemic diseases	The Hindu	Jan 9, 2013
6.	Nanotechnology 2012, 23 (45), 455103	Using gold nanoparticles for drug delivery	The Hindu	May 22, 2013
7.	Chem. Comm. 2013, 49, 7644-7646	Fluorescent hybrid cancer drug carrier	Nature India	Aug 13, 2013
8.	Chem. Comm. 2014, 50, 14367-14370	Herb nanoparticles aid blood vessel formation	Nature India	Nov 26, 2014
9.	Chem. Comm. 2014, 50, 14367-14370	Scientists make herb nanoparticles with potential for treating heart disease	Hindustan Times	Nov 30, 2014
10.	Adv. Healthc. Mater. 2015, 4(11), 1722-1732	Graphene oxide with angiogenic properties	Chemistry Views	Jul 14, 2015
11.	Adv. Healthc. Mater. 2015, 4(11), 1722-1732	Graphene helps grow new blood vessels	Nature India	Aug 18, 2015

LIST OF CONFERENCES ATTENDED

- Participated in Summer Biomimetic Catalysis Based on Porous Platform (BCP^2) Workshop held on Aug 2019 at Glory Condo, Haeundae, Busan, South Korea.
- Participated in 121st General Meetings held on Apr 2018 at International Convention Center, Jeju Island, South Korea.
- Presented poster in 6th International Conference on Nano Science and Technology (ICONSAT) held on Mar 2014 at Panjab University, Chandigarh, India.
- Presented Poster in The International Conference on Chemical Biology (ICCB) held on Feb 2014 at CSIR-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad, India.
- Presented Poster in 3rd International Conference on Advanced Nanomaterials and Nanotechnology (ICANN) held on Dec 2013 at Indian Institute of Technology Guwahati (IIT Guwahati), Guwahati, India.
- Performed oral presentation in International Conference on Nanotechnology (ICNANO) held on Jul 2013 at Ansal University, Gurgaon, India.

LIST OF HONOURS/ AWARDS

- Junior Research Fellowship (Jan 2012 – Dec 2013) and Senior Research Fellowship (Jan 2014 – Dec 2016) from the University Grants Commission (UGC), Government of India by qualifying CSIR-UGC NET Examination to pursue Ph.D.
- Young Scientist Presentation Award in International Conference on Nanotechnology (ICNANO) "Lessons from Nature and Emerging Technologies" held on Jul 25 and 26, 2013 at Ansal University, Gurgaon, India.
- Best Poster Prize in 3rd International Conference on Advanced Nanomaterials and Nanotechnology (ICANN) held on Dec 01 to 03, 2013 at Indian Institute of Technology Guwahati (IIT Guwahati), Guwahati, India.
- Nanoscale Poster Prize (Royal Society of Chemistry) in 6th International Conference on Nano Science and Technology (ICONSAT) held on Mar 03 to 05, 2014 at Panjab University, Chandigarh, India.

ROLE AS EDITOR

- **Editorial Board Member – Springer Nature** (**BMC Cancer**; UK; IF # 4.638)
- **Topic Editor – MDPI** [**Cancers** (IF # 6.575), **Pharmaceutics** (IF # 6.525), **Nanomaterials** (IF # 5.719), **J. Clin. Med.** (IF # 4.964) & **Biomedicines** (IF # 4.757)]

ROLE AS INVITED REVIEWER

- **Acta Biomaterialia** (Elsevier, ISI 2021 IF # 10.633); **Nanoscale** (Royal Society of Chemistry, ISI 2021 IF # 8.307); **Materials Science and Engineering C** (Elsevier, ISI 2021 IF # 8.457); **Biomaterials Science** (Royal Society of Chemistry, ISI 2021 IF # 7.590); **Journal of Materials Chemistry B** (Royal Society of Chemistry, ISI 2021 IF # 7.571); **Food & Function** (Royal Society of Chemistry, ISI 2021 IF # 6.317); **Colloids and Surfaces B: Biointerfaces** (Elsevier, ISI 2021 IF # 5.999); **European Journal of Medical Research** (Springer Nature, ISI 2021 IF # 4.981); **New Journal of Chemistry** (Royal Society of Chemistry, ISI 2021 IF # 3.925); **RSC Advances** (Royal Society of Chemistry, ISI 2021 IF # 4.036); **Royal Society Open Science** (The Royal Society Publishing, ISI 2021 IF # 3.653)

ASSOCIATION WITH SCIENTIFIC BODY

- Member (MRSC) of the Royal Society of Chemistry (RSC), UK
- Member of the American Heart Association (AHA), USA

SCIENTIFIC BLOGGER

- RSC Advances (Royal Society of Chemistry, UK; ISI 2021 IF # 4.036)

GOOGLE SCHOLAR CITATIONS

- Citations: 2019 (Dated Jan 19, 2023)
- h-index: 23 (Dated Jan 19, 2023)
- i10-index: 28 (Dated Jan 19, 2023)