CURRICULUM VITAE

Akalesh Kumar Verma, PhD.

Assistant Professor (II)

Zoology

Cotton University (December, 2015 to Till date)

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Google Scholar: https://scholar.google.co.in/citations?user=c3XtOUkAAAAJ&hl=en

	All	Since 2016
Citations	2006	1644
h-index	26	23
i10-index	59	50
Scopus h-index	22	-
Scopus ID	54914841800	-
Researcher ID	AAF-6204-2020	-
Google scholar ID	c3XtOUkAAAAJ	-
Vidwan ID	259430	-

EDUCATION

1. **Post Doctoral Degree** (Indo-US Exchange Fellow): Morehouse School of Medicine (2015), Department of Microbiology, Biochemistry and Immunology, Atlanta, Georgia, USA.
2. **Ph.D**., Zoology, Cell & Tumor Biology Laboratory, North Eastern Hill University, Shillong, India, 2013 (supervisor- Prof. S.B. Prasad).
   Thesis: Studies on the antitumor efficacy and toxicity of the blister beetle, *Mylabris cichorii* extract in mice bearing ascites Dalton's lymphoma.
3. **M.Sc**., Life Sciences (Specialization- Biochemistry & Molecular Biology), ranking **1st class 1st (Zoology)**, Dibrugarh University, Dibrugarh, Assam, India, 2007.
4. **B.Sc.**, Zoology (Major), Lumding College, Lumding, Guwahati University, Guwahati, India, 2005.
5. Higher Secondary in Science, AHSEC (Physics, Chemistry & Biology), Lumding College, Lumding, India, 2002.
6. High School Leaving Certificate, SEBA, Karbi Anglong, Assam, India, 1999.

SHORT TERM CERTIFICATE COURSE

1. Certificate course in computer programming language (C/C^{++}), BDPS, Mumbai, India, 2009.
2. Certificate course in MATLAB Programming, Computer Centre, NEHU, Shillong, India, 2011.
3. Certificate course in 2D & 3D designing in AUTOCAD, CEC, Maligaon, Guwahati-12, Assam, 2024

RESEARCH EXPERIENCE

Ph.D. research experience: Five years plus (2008-2013)
Post Doctoral research experience: 2 Years 7 Months years

1. **Post Doctoral Fellow (Indo-US Exchange Fellow)** at Morehouse School of Medicine (April, 2015 to December, 2015), Department of Microbiology, Biochemistry and Immunology, Atlanta, Georgia, USA.
   Title: Role of Chemokine receptor in disparities associated with prostate cancer progress.

2. **DBT-Post Doctoral Fellow** (April, 2013-April, 2015) at Cachar Cancer Hospital & Research Centre, Silchar, Assam; Cancer Institute, Addayar, Chennai and Assam University, Assam.
   Title: Validation of the SNPs involved in promoting genetic susceptibility to oral cancer among long term tobacco chewers identified in the North-Eastern and Southern India population.

TECHNICAL SKILLS

1. Experience in culture of cancer cell lines (MCF-7, DL, EAC etc.) *in vitro* and maintenance of cancer cell lines in C3H/He mice strain, *in vivo.*
2. SNPs analysis and HPV subtyping of oral cancer in North East Indian population.
3. Experience in maintenance and breeding of mice, rats and rabbits at North Eastern Hill University (2008-2013)
4. Human peripheral blood lymphocytes, macrophages and thymocyte collection and culture for cytotoxicity assay, Enzymes assay and kinetics study.
5. Apoptosis, necrosis and autophagy study in different cancer cell lines with possible molecular mechanism by TEM, SEM, Flowcytometry, fluorescence microscope, PCR and confocal microscopy.
6. Maintenance and testing of anti-diabetic activity of natural products extracts in alloxan induced diabetic mice.
7. Screening of antioxidant and anticancer activity of plants and insects extracts *in vivo* and *in vitro.*
8. Phytochemicals analysis, isolation, purification and crystallization of active compound from plants and animals sources using NMR, IR, GC-mass, UV, CHNO- elemental analysis, HPLC and X-ray diffractometer.
9. Study of cell proliferation and kinetics by flowcytometry, fluorescent and Giemsa staining method.
10. Working experience in PCR, Q-PCR, PCR primer design and western blot analysis.
11. Separation of biological sample using Agarose gel, SDS-PAGE, Immuno-electrophoresis, Immuno-diffusion, TLC and column chromatography.
12. Genotoxicity assay (Chromosome aberration, comet-NE assay, sperm abnormality and micronucleus assay) using confocal microscope.
13. Experience in haematology studies (RBC/WBC counts, Hb and PCV), histopathology with histomorphometric analysis, urine test, liver function test and kidney function test after drug treatment on experimental animals.
14. Virtual screening using ligand based pharmacophore generation and their QSAR analysis.
15. *In silico* 3D Molecular modeling of protein structure determination.
16. *In silico* genome analysis, protein function prediction and phylogenetic tree analysis.
17. Proficient in statistical analysis and software (Origin Pro & Matlab).

CURRENT AREAS OF RESEARCH

1. Bio-activity guided isolation, characterization and structure elucidation of anticancer active principle(s) from different medicinal insects and plants collected from North East India.
2. 3D Nuclei design &Freshwater pearl culture.
3. Cytokines and chemokines mediated Androgen receptor transcriptional activation in prostate cancer.

4. SNP profiling, HPV sub typing and polyploidy analysis of oral cancer from extensive tobacco chewers of North East Indian population.
5. Studies of molecular mechanisms of cancer progression and treatments through Her-2, ER, PR, ALDH-1 and P-16.
6. *In silico*- Drug designing & Network Pharmacology.

WORKSHOPS AND TRAINING ATTENDED

1. Certificate in High Performance computing course C-DAC, Pune, March 03-06,2009.
2. CIMAP Training school on Advance Instrumentation and Analytical Techniques for Natural Products (AIAT-2009). The instruments covered were GC, GC-MS, HPLC, HPTLC, NMR, LC-MS, FT-NIR and ICP. June 10-16, 2009.
3. Participated in the workshop on FT-NMR spectroscopy: Theory, Application, and Experimentation. SAIF, NEHU, Shillong, Nov 16- 19, 2009.
4. Participated in the 16th DBT-sponsored training course on "*In silico* Approach to Genome Analysis, BIC-NEHU, February, 5-11, 2009.
5. Certificate course (6 months) in C & C++ from BDPS, Mumbai, India 2009.
6. Participated in the workshop on "Atomic Absorption Spectroscopy Basic principles, Applications and Practical demonstration, SAIF, NEHU, Shillong, Nov 11- 13, 2009.
7. Hands on training program on Bee hive rearing, culture and managements at Agriculture University, Jorhat, Assam (India), December 15-20, 2006.
8. Three month project work experience at Dibrugarh University entitled "The Effect of Endosulfan (35% E.C.) on The Muscle Tissue of Fresh Water Air-Breathing Teleost (*Channa gachua)"*.
9. Short term course on Advance Technique in Cellular and Molecular Biology held at IIT, Guwahati organized by dept. of Biotechnology, November 15 -19, 2010.
10. Short term training course (3 months) in Matlab Programming, NEHU, Computer Centre 2011.
11. Participated in the workshop on 'Techniques in Molecular Biology' Under State Level Biotech Hub Project, NEHU, Shillong, November 17- 25, 2011.
12. Short term training on Protein 3D Structure Modeling. Tezpur University, Tezpur, November 23-26, 2011.
13. Short term course in Disaster management. Organized by UGC-Academic staff College NEHU, 7-9 Feb, 2012.
14. Attended in a training program on 'In silico characterization of Proteins from sequences and Molecular modeling approaches'. BIF, Veterinary College, Assam Agriculture University, Guwahati, November 7-9, 2012.
15. Attended 12th Clinical Cytometry Course at Tata Memorial Hospital, Hematopathology Laboratory. Organized by: TATA memorial Hospital and Super Religaregare Lab Ltd., Mumbai, on 4-8 August 2014.
16. Attended in a training program on 'Computational Approaches to understand Protein-Protein and Protein-Ligand interactions'. BIF, Veterinary College, Assam Agriculture University, Guwahati, February 16-19, 2016.
17. Participated in a workshop entitled "Capacity building in grant writing skills and effective management of Intellectual property Rights (IPR) in Biotechnology by universities and research institutions in North East Region" at Dibrugarh University, Dibrugarh, Assam. Organized by BCIL, New Delhi, November 16-18, 2016.
18. Participated in a workshop entitled Campus Bird Count; Organized by Cotton College State University (Now Cotton University) from 12-15 February, 2016.
19. Participated in a workshop entitled "Computational approach to understand protein-protein and protein-ligand interactions" Conducted by the Bioinformatics Infrastructure Facility, C.V.Sc., AAU., Khanapara, Guwahati from 16-19 February, 2016.
20. Participated in a workshop entitled "Biomolecular Interactions and Dynamics" Conducted by the Bioinformatics Infrastructure Facility, C.V.Sc., AAU, Khanapara, Guwahati from 3-6 January, 2017.

21. Participated in UGC Sponsored Orientation Program; Organized by HRD Centre, Gauhati University, from 29 May to 25 June, 2017.
22. Attended International Workshop on "Tools and Techniques to Perform Molecular Modeling and Computer-Aided Drug Design" seven days international workshop 'MMTT-2021' organized by the Department of Medicinal Chemistry, NIPER Guwahati, January 11-17, 2021.
23. Faculty Development Program on Basic and Advanced Proteomics Approaches, Indian Institute of Technology Bombay, 15-26 February, 2021.
24. Completed 5 days training program on Understanding, scouting, protecting, and utilizing Intellectual Property from North East. Organized by: North East Centre for Technology Application and Reach (NECTAR) at Techno Demo Centre, Guwahati Centre, Assam, May 23-27, 2022.
25. One week national workshop on intellectual property rights, academic ethics, and innovation for entrepreneurship development (NWIPR-2023). Organized by: Handique Girls' College, Assam and Patent Information Centre (PIC), ASTEC. Date: 6^{th}-10^{th} November 2023.

RESEARCH PAPERS PUBLISHED/ACCEPTED

1. Dutta, D., Singh, N.S. and ***Verma, A.K.***, (2024). Genotoxicity, acute and sub-acute toxicity profiles of methanolic Cordyceps militaris (L.) Fr. extract in Swiss Albino Mice. *Journal of Ethnopharmacology*, 335, 118603.
   https://doi.org/10.1016/j.jep.2024.118603
   Impact factor: 4.8
2. Devi, M., Singh, R.K., **Verma, A.K.**, and Singh, N.S. (2024). *In vitro* cytotoxic potential of *Clerodendrum colebrookianum* Walp. against Dalton's Lymphoma cells. *CINEFORUM*, *64*(2), 170–186.
   https://revistadecineforum.com/index.php/cf/article/view/111
   Impact factor: 3.2
3. Begum, T., Agarwal, S., Bhuyan, P., Das, J., Verma, A. K., Guha, A., Ganguly, M. (2024). *Aloe vera* gel mediated green synthesis of ruthenium nanoparticles and their potential anticancer activity, Next Nanotechnology.7, 100095.
   https://doi.org/10.1016/j.nxnano.2024.100095
4. Mezhubeinuo, Mohanta, R., Bordoloi, H., ***Verma, A.K**. and Bez, G., (2024). L-proline H2SO4 catalyzed synthesis of novel coumarin-based spiroindolino-3, 4-dihydropyrimidin-2 (1 H)-ones: in vitro cytotoxic assay and molecular docking study. *Molecular Diversity*, 1-16.
   https://doi.org/10.1007/s11030-024-10878-w
   Impact factor: 3.9
5. Borah, P., Baral, A., Paul, A.K., Ray, U., Bharalee, R., Upadhyaya, H., Chabukdhara, M. and ***Verma, A.K.**, (2024). Traditional Wisdom in Modern Medicine: Unveiling the Anticancer Efficacy of Northeastern Indian Spices. *Journal of Herbal Medicine*, p.100896.
   https://doi.org/10.1016/j.hermed.2024.100896
   Impact factor: 2.3
6. Bhattacharjee, T., Nath, S., Baildya, N., Das, A., Pathak, S., Molins, E., Mahmoudi, G., ***Verma, A.K.**, Borah, P. and Adhikari, S., 2024. Supramolecular assemblies of Zn (II) complex based on dithiolate-amine binary ligands: Synthesis, crystal structure, Hirshfeld surface, DFT, molecular docking, and anticancer studies. *Inorganic Chemistry Communications*, *167*, 112762.
   https://doi.org/10.1016/j.inoche.2024.112762
   Impact factor: 3.8

7. Adhikari, S., Nath, S., Kansız, S., Balidya, N., Paul, A.K., Dege, N., Sahin, O., Mahmoudi, G., ***Verma, A.K.** and Safin, D.A., (2024). Zinc (II) coordination compound with N′-(pyridin-2-ylmethylene) nicotinohydrazide: Synthesis, crystal structure, computational and cytotoxicity studies. *Journal of Inorganic Biochemistry*, p.112598. https://doi.org/10.1016/j.jinorgbio.2024.112598
   Impact factor: 4.1
8. Dutta, K., Verma, A.K., Gogoi, M., Devi, M., Singh, M.R. and Singh, N.S., (2024). Anti-inflammatory activity of the phenol rich fraction of Garcinia pedunculata Roxb (ex. Buch Ham): an in vitro and in vivo study. *Inflammopharmacology*, pp.1-11. https://doi.org/10.1007/s10787-024-01484-1
   Impact factor: 5.8
9. Gogoi, H.P., ***Verma, A.K.**, Gogoi, M., Goswami, N. and Barman, P., (2024). Design, synthesis, and characterization of M (II)-Schiff base complexes containing 3, 5-di-tert-butyl salicylaldehyde: DNA binding/cleavage, DPPH radical scavenging activity, cytotoxic activity, and catalytic activity investigation. *Inorganic Chemistry Communications*, p.112462. https://doi.org/10.1016/j.inoche.2024.112462
   Impact factor: 3.8
10. Ghosh, B.N., Sarkar, P., Gogoi, M., Palo, S., Kumar, A.U., Sutradhar, S., Das, D., Krishnappagowda, L.N. and ***Verma, A.K.**, (2024). Investigation of protein/DNA binding, and in vitro cytotoxicity of novel Cu (II) and Zn (II)-dipyrazinyl pyridine complexes. *New Journal of Chemistry*. (Accepted). https://doi.org/10.1039/D4NJ01067A
    Impact factor: 3.3
11. Banik, S., Baishya, T., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K**., Das, J. and Bhattacharyya, M.K., (2024). 'Charge Reverse'Halogen Bonding Contacts in Metal-Organic Multi-Component Compounds: Antiproliferative Evaluation and Theoretical Studies. *Inorganics*, *12*(4), p.111.
    Impact factor: 2.9
    https://doi.org/10.3390/inorganics12040111
12. Dutta, D., Singh, N.S., Aggarwal, R. and ***Verma, A.K.**, (2024). *Cordyceps militaris*: A Comprehensive Study on Laboratory Cultivation and Anticancer Potential in Dalton's Ascites Lymphoma Tumor Model. *Anti-cancer Agents in Medicinal Chemistry*. 24(9), 668 - 690.
    Impact factor: 2.8
    https://doi.org/10.2174/0118715206282174240115082518
13. Devi, M., **Verma, A.K**., Singh, N.S., Das, J., Dutta, K., Gogoi, M. and Dutta, D. (2023). Phytochemical investigation and in vitro cytotoxicity of *Phlogacanthusthyrsiformis* (Roxb. Ex Hardw.) Mabb. against Dalton's Lymphoma Ascites (DLA) cells. *Advances in Traditional Medicine*, 1-13.
    Impact factor: 2
    https://doi.org/10.1007/s13596-023-00731-0
14. Baruwa, B., ***Verma, A.K**., Singh, N.S. and Goswami, M., (2023). Unlocking nature's arsenal: Exploring the molecular interactions of *Tinospora cordifolia* phytochemicals with anti-apoptotic receptor proteins. Global Scientific and Academic Research Journal of Multidisciplinary Studies. 2(11), 1-24. https://doi.org/10.5281/zenodo.10183684
15. Das, J., Fatmi, M.Q., Devi, M., Singh, N.S. and ***Verma, A.K.**, (2023). Antitumor activity of cordycepin in murine malignant tumor cell line: An *in vitro* and *in silico* study. *Journal of Molecular Structure*, p.136946.
    Impact factor: 3.8
    https://doi.org/10.1016/j.molstruc.2023.136946
16. Baruwa, B., ***Verma, A.K**., Kataki, B., Dutta, D., Goswami, M. and Singh, N.S. (2023). Giloy (*Tinospora cordifolia*) extract mediated biochemical, haematological and histological alterations in mice. *Journal of Advanced Zoology*, *44*(S-5), pp.705-722.
    https://doi.org/10.17762/jaz.v44iS-5.982
17. Bhattacharya, A., **Verma, A.K.**, Rao, S., Momin, S.G., Radhakrishnanand, P. and Sarkar, P., (2023). Unlocking the phytochemicals in unopened pitcher fluids of *Nepenthes khasiana*-a GC–MS study. *Intelligent Pharmacy* (Accepted).

https://doi.org/10.1016/j.ipha.2023.10.005

18. Swargiary, A., Roy, M.K., Boro, H., **Verma, A.K**., Daimari, M. and Das, J.K., (2023). Phytochemical analysis, antiproliferative and apoptosis-inducing properties of *Persicariastrigosa* Nakai. *Journal of Applied Pharmaceutical Science*, *13*(5), pp.162-170.
https://doi.org/ 10.7324/JAPS.2023.106106
19. Sawkmie, M., Banothu, V., **Verma, A.K**., Paul, A.K., Krajewski, S., Kaminsky, W. and Kollipara, M.R. (2023). Cyclopentadienyl and indenyl ruthenium (II) complexes containing diazafluorenone derivative ligands: Syntheses, characterization, antibacterial and cytotoxicity studies. *Journal of Organometallic Chemistry*, p.122876.
Impact factor: 2.3
https://doi.org/10.1016/j.jorganchem.2023.122876
20. Chakraborty, R., Dutta, A., Baruah, B.J., Rajni, K., Sarma, P., Sharma, A., Goswami, K., Myakala, H. and ***Verma, A. K.** (2023). Pancreatic cancer: A review on pathophysiology, naturopathy, clinical treatment and outcomes. Current Cancer Therapy Reviews. 20(3), 263 – 282.
Impact factor: 0.6
https://doi.org/10.2174/1573394719666230830125213
21. Nongpiur, C.G.L., Soh, C., Diengdoh, D.F., **Verma, A.K.**, Gogoi, R., Banothu, V., Kaminsky, W. and Kollipara, M.R. (2023). 3-acetyl-coumarin-substituted thiosemicarbazones and their ruthenium, rhodium and iridium metal complexes: An investigation of the antibacterial, antioxidant and cytotoxicity activities. *Journal of Organometallic Chemistry*, p.122788.
Impact Factor: 2.345
https://doi.org/10.1016/j.jorganchem.2023.122788
22. Borah, L., Ahmed, R., **Verma, A. K**., and Chetri, S. (2023). Potential of *Curcuma longa* Linn. (Turmeric) in management of *Callosobruchus chinensis* L.: *In-silico* analysis. *Journal of Biological Control*, 36 (2&3): 151-162.
https://doi.org/10.18311/jbc/2022/31878
23. Nongpiur, C.G.L., **Verma, A.K.**, Ghate, M.M., Poluri, K.M., Kaminsky, W. and Kollipara, M.R. (2023). Synthesis, cytotoxicity and antibacterial activities of ruthenium, rhodium and iridium metal complexes containing diazafluorene functionalized ligands. *Journal of Molecular Structure*, p.135474.
Impact Factor: 3.841
https://doi.org/10.1016/j.molstruc.2023.135474
24. Adhikari, S., Sheikh, A.H., Baildya, N., Mahmoudi, G., Choudhury, N.A., Okpareke, O., Sen, T., ***Verma, A.K**., Singh, R.K., Pathak, S. and Kaminsky, W. (2023). Antiproliferative Evaluation and Supramolecular Properties of a Pd (II) complex Harvested from Benzil bis (pyridyl hydrazone) Ligand: Combined Experimental and Theoretical Studies. *Inorganic Chemistry Communications*, 110646.
Impact Factor: 3.428
https://doi.org/10.1016/j.inoche.2023.110646
25. Sharma, P., Gomila, R.M., Barceló-Oliver, M., ***Verma, A.K**., Dutta, D., Frontera, A. and Bhattacharyya, M.K., (2023). Unconventional Dual Donor-Acceptor Topologies of Aromatic Rings in Amine-Based Polymeric Tetrahedral Zn (II) Compounds Involving Unusual Non-Covalent Contacts: Antiproliferative Evaluation and Theoretical Studies. *Crystals*, *13*(3), 382.
Impact Factor: 2.670
https://doi.org/10.3390/cryst13030382
26. Baishya, T., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K**. and Bhattacharyya, M.K. (2022). Enclathration of Mn (II)(H2O) 6 Guests and Unusual Cu⋯ O bonding Contacts in Supramolecular Assemblies of Mn (II) Co-crystal Hydrate and Cu (II) Pyridinedicarboxylate: Antiproliferative Evaluation and Theoretical Studies. *Polyhedron*, 116243.
Impact Factor: 3.052
https://doi.org/10.1016/j.poly.2022.116243

27. Dutta, D., Baishya, T., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K***. and Bhattacharyya, M.K. (2022). Supramolecular Assemblies involving Energetically Significant Unconventional π (CN)-π and Anion-π (nitrile) Contacts in Zn (II) Coordination Compounds: Antiproliferative Evaluation and Theoretical Studies. *Journal of Molecular Structure*, 134568.
Impact Factor: 3.841
https://doi.org/10.1016/j.molstruc.2022.134568
28. Nongpiur, C.G.L., **Verma, A.K**., Singh, R.K., Ghate, M.M., Poluri, K.M., Kaminsky, W. and Kollipara, M.R. (2022). Half-sandwich ruthenium (II), rhodium (III) and iridium (III) fluorescent metal complexes containing pyrazoline based ligands: DNA binding, cytotoxicity and antibacterial activities. *Journal of Inorganic Biochemistry*, 238, 112059.
Impact Factor: 4.336
https://doi.org/10.1016/j.jinorgbio.2022.112059
29. Baishya, T., Sharma, P., Gomila, R.M., Frontera, A., Barceló-Oliver, M., ***Verma, A.K.*** and Bhattacharyya, M.K. (2022). Fumarato and Phthalato Bridged Dinuclear Metal-Organic Cu (II) and Mn (II) Compounds involving Infinite Fumarate-water Assemblies and Unusual Structure-guiding H-bonded Synthons: Antiproliferative Evaluation and Theoretical Studies. New Journal of Chemistry. 46(37), 17817-17833.
Impact Factor: 3.925
https://doi.org/10.1039/D2NJ01860H
30. Dutta, D., Sharma, P., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K***., Baishya, T. and Bhattacharyya, M.K., (2022). Supramolecular assemblies involving unconventional non-covalent contacts in pyrazole-based coordination compounds of Co (II) and Cu (II) pyridinedicarboxylates: antiproliferative evaluation and theoretical studies. *Polyhedron*, 224, 116025.
Impact Factor: 3.052
https://doi.org/10.1016/j.poly.2022.116025
31. Sarma, P., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K.,*** Saikia, S. and Bhattacharyya, M.K. (2022). Terephthalato and Succinato bridged Mn (II) and Zn (II) Coordination Polymers involving Structure-guiding H-bonded Tetrameric Assemblies: Antiproliferative Evaluation and Theoretical Studies. *Polyhedron*, 224, 115982.
Impact Factor: 3.052
https://doi.org/10.1016/j.poly.2022.115982
32. Dutta, D., Sharma, P., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K.***, Baruwa, B. and Bhattacharyya, M.K. (2022). Solvent-driven structural topologies in phenanthroline-based co-crystals of Zn (ii) involving fascinating infinite chair-like {[(bzH) 4 Cl 2] 2−} n assemblies and unconventional layered infinite {bz-H 2 O-Cl} n anion-water clusters: antiproliferative evaluation and theoretical studies. *New Journal of Chemistry*, *46*(12), 5638-5652.
Impact Factor: 3.925
https://doi.org/10.1039/D1NJ05234A
33. Sharma, P., Baishya, T., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K.***, Das, J. and Bhattacharyya, M.K., 2022. Structural topologies involving energetically significant antiparallel π-stacking and unconventional N (nitrile)··· π (fumarate) contacts in dinuclear Zn (ii) and polymeric Mn (ii) compounds: antiproliferative evaluation and theoretical studies. *New Journal of Chemistry*, *46*(11), 5296-5311. **Cited by 3**
Impact Factor: 3.925
https://doi.org/10.1039/D1NJ04786H
34. Das, A., Sharma, P., Gomila, R.M., Frontera, A., ***Verma, A.K.***, Sarma, B. and Bhattacharyya, M.K., 2022. Synthesis, structural topologies and anticancer evaluation of phenanthroline-based 2, 6-pyridinedicarboxylato Cu (II) and Ni (II) compounds. *Polyhedron*, *213*, 115632.**Cited by 4**
Impact Factor: 3.052
https://doi.org/10.1016/j.poly.2021.115632

35. Sarma, P., Sharma, P., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K.**, Baruwa, B. and Bhattacharyya, M.K. (2022). Charge assisted hydrogen bonded assemblies and unconventional O⋯ O dichalcogen bonding interactions in pyrazole-based isostructural Ni (II) and Mn (II) compounds involving anthraquinone disulfonate: Antiproliferative evaluation and theoretical studies. *Journal of Molecular Structure*, 1250(1):131883.**Cited by 2**
Impact Factor: 3.841
https://doi.org/10.1016/j.molstruc.2021.131883
36. Nath, H., Sharma, P., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K**., Das, J. and Bhattacharyya, M.K., 2022. Phenanthroline-based Ni (II) coordination compounds involving unconventional discrete fumarate-water-nitrate clusters and energetically significant cooperative ternary π-stacked assemblies: Antiproliferative evaluation and theoretical studies. *Journal of Molecular Structure*, *1248*, 131424. **Cited by 4**
Impact Factor: 3.841
https://doi.org/10.1016/j.molstruc.2021.131424
37. Dkhar, L., ***Verma, A.K.**, Banothu, V., Kaminsky, W. and Kollipara, M.R., 2021. Ruthenium, rhodium, and iridium complexes featuring coumarin hydrazone derivatives: Synthesis, characterization, and preliminary investigation of their anticancer and antibacterial activity. *Applied Organometallic Chemistry*, *36*(4), e6589.
Impact Factor: 4.072
https://doi.org/10.1002/aoc.6589
38. Roy, M.K., Swargiary, A. and **Verma, A.K.**, 2021. Antiproliferative and apoptosis-inducing properties of selected medicinal plants of Assam, India.*Archives of Medicine and Health Sciences*9(2),236-243.https://doi.org/10.4103/amhs_210_21
39. Dutta, D., Sharma, P., Gomila, R.M., Frontera, A., Barcelo-Oliver, M., ***Verma, A.K**., Gogoi, M. and Bhattacharyya, M.K., 2021. Solvent driven structural topologies involving unconventional OH (methanol)⋯ π contact and anti-cooperative HB⋯ anion-π⋯ HB assemblies with unusual enclathration of dual guest (H2O) 4 cores in Mn (II) and Ni (II) coordination compounds: Antiproliferative evaluation and theoretical studies. *Polyhedron*, *210*, 115503. **Cited by 1**
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99. **Verma, A. K**., and Prasad, S.B., 2010.Antitumor activity of n-butanol fraction of *Mylabriscichorii* extract in murine ascites Dalton's lymphoma. *Bulletin of Life Sciences.* 16: 92-100.
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BOOK PUBLISHED/ EDITED WORKS

1. **General Zoology** (for UG & PG students), Authors: **Dr. Akalesh Kumar Verma** & Dr. Sweta Singh, 2022. Publisher: BlueRose Publishers, Daryaganj, Delhi, 110002, ISBN: 978-93-93899-65-1.
2. **Dr. Akalesh Kumar Verma** (2017). Editor of Seminar Abstract Book titled "National Seminar on Recent Advances in Zoological Research and Integrative Biology", 27-28 February 2017. Organized by Department of Zoology, Erstwhile Cotton College State University (now Cotton University). Event: Platinum Jubilee Celebration of Zoology Department, Cotton College State University.

BOOK CHAPTERS/PROCEEDING PAPERS PUBLISHED/ACCEPTED

1. **Verma, A.K**., Prasad, S.B. and Bordoloi, M.J. (2011). (Eds). Baruah, P.K. Evaluation of antitumor potential of *Mylabris cichorii* Fabr and *Cassia tora*, Lin combined extracts and their active principle(s) against murine ascites Dalton's lymphoma. Bhawani Print and Publications, Guwahati-26, India. *Proceeding Plant Resource Management and Conservation Strategies in N.E. Region*, pp. 149-155. ISBN: 978-93-81139-47-9.
2. **Verma A.K.**, Prasad S.B., Bordoloi M.J. (2013). (Eds). Buragohain, J. Anticancer and cytotoxic effect of *Mylabris cichorii* extract against Dalton's lymphoma ascites-induced tumor model. Daya Publishing House, New Delhi-02. *Traditional Phytotherapy*. Pp. 68-78. ISBN: 978-81-7035-821-3.
3. Kalita S., Prasad S.B. and**Verma A.K**. (2013). (Eds). Kalita, J. Modulatory effect of Ascorbic acid (Vitamin- C) on Chlorambucil-mediated antitumor activity against murine ascites Dalton's lymphoma. Zoological Society of Assam. Saraighat Printers, Guwahati-03, India. *International Seminar on Bioresources and Human sustenance*. Pp. 131-137. ISBN: 978-93-82384-36-6.
4. Gogoi, D., **Verma, A.K**., Singh, R.K., Bordoloi, M.J., Bezbarua, R.L., Kangabam, R.D., Pradeep, S. and Konwar, B.K. (2013). (Eds). Buragohain J. Ligand based virtual screening on some of the anti-cancer phytochemicals to develop a novel inhibitor of β-catenin against cancer: Part-II. Daya Publishing House, New Delhi-02, India. *Traditional Phytotherapy*. pp. 9-26. ISBN: 978-81-7035-821-3.
5. Prasad, S.B. and **Verma, A.K.** (2014). (Eds). P.P. Mathur. Studies on antitumor activity and tissues toxicity of cantharidin, a monoterpenoid, isolated from blister beetles, *Mylabris cichorii.* Narendra Publishing House, New Delhi-06, India, Chapter-12 in *Contemporary Topics in Life Sciences*, pp.197-214. ISBN: 978-93-82471-77-6.
6. **Verma, A.K.** and Prasad, S.B. (2017). (Eds). G.S. Solanki. Cantharidin, a bioactive compound from blister beetles, *Epicauta hirticornis* triggers apoptotic cell death and arrests cell cycle in a murine tumor model. Biodiversity Conservation strategy and application. Edt:, In Section-III: Biodiversity & Technology. Pp. 214-228. ISBN-13: 978-8193732748.
7. **Verma, A.K.** and Singh, S. (2021). (Eds). Rantumoni Sharma, Namita Nath and Mohan Chandra Kalita. Entomo-therapeutic potential of *Lytta vesicatoria* (Linnaeus, 1758) in human breast cancer by blocking cell proliferation and inducing apoptosis *via* mitochondria stress-related signaling pathway. Wild edible bioresources of North East India. ISBN: 9789390434589. EBH Publisher, Panbazar, Guwahati-01, India.
8. Das, J, Singh, N.S., Aggarwal, R, Dutta, D, Baruwa B, Barthakur T, and **Verma A.K.** (2021). A review on bioactive metabolites and pharmacological characteristics or *Cordyceps* spp. (Eds) J. Sonawal, U. Phangchopi, S.

Rahman, Chapter-2, In Curent Biological Research (pp. 8-28), Department of Botany and Zoology, Namrup College, ISBN: 9789355661499

9. Dutta, K, Rana V, Gogoi M, Devi M, **Verma A.K.**, & Singh N.S. (2023). *Carica papaya* Leaf: It's Phytochemistry, Ethnomedicinal and Therapeutic Potential. In K. Sarma, A. Bawri, Imlikumba, R. Teron, Chapter-6, Ethnozoological Research in Northeast India (pp. 89-111), NEIAFMR publishers (India), Pasighat-791102, Arunachal Pradesh, ISBN: 9788195504725.
10. Devi, M., Dutta, K., Das, J., Gogoi, M., Dutta, D., **Verma, A.K.**, Singh, N. S., (2023). Ants (Hymenoptera): an exploration of its use as folklore medicine and pharmacological potential of its venom. Recent Trends in Life Sciences, Published by: Department of Zoology, Madhabdev University, Lakhimpur, Assam. (Eds): Boruah S., Bhuyan, G., Pegu, B. K., ISBN: 9789395794046.
11. Devi, M., Bordoloi, S., Pathak, K., Gogoi, M., Dutta, K., Das, J., Dutta, D., Singh, N.S., **Verma, A. K.** (2024). *Phlogacanthus curviflorus* (WALL) NEES: an insight into its expository traditional uses and extensive phytochemistry. In Current trends and advances in life science research, Volume: 1, (Eds) Dr. Parag Deka, Dr. Mallika Gogoi, Dr. Bandita Talukdar. Publisher: Pandu College Publication Cell, Pandu College, Guwahati-12, Assam, India. ISBN 978-81-922432-9-0.

PATENT FILED/GRANTED

1. **United Kingdom design patent (Granted)**: Title: Cancer Detection Device. Design application number: 6302729, Grant date: 18 August 2023. Version: 14-2023. Class 24 -Medical and laboratory equipment, **Sub class** 01 - Apparatus and equipment for Doctors, Hospitals and Laboratories. **Inventors**: Verma, A.K., Mopuri, R., Singh, N., Singh, R., Sarkar, B., Bachanna, P.
2. **United Kingdom design patent (Granted)**: Title: Pearl Shaping Machine. Design application number: 6311031, Grant date: 25 September 2023. International Design Classification: Version: 14-2023 Class: 15 Machines, Subclass: 09 Machine Tools, Abrading and Founding Machinery. **Inventors**: Verma, A.K., Singh, V., Singh, P. K., Singh, R., Sarkar, B.K.
3. **Indian patent (Granted):** Title: Allantoic Cavity Drilling Device. Design No.: 395424-001, Grant date: 15/11/2023. **Inventors**: **Akalesh Kumar Verma**,Rezina Ahmed,Namram Sushindrajit Singh, Dr. Sweta Singh, Dipanjan Dey, Suraj Chetri, Lupamudra Borah, Suchi Parna Roy, Naaz Parbin Islam and Golphina Ahmed.
4. **Indian patent (Granted):** Title: Pearl Grafting Tool. Design No.: 397463-001, Grant date: 14/12/2023. **Inventors**: **Akalesh Kumar Verma**, Devajit Basumatari, Rezina Ahmed, Shamim Rahman, Rohit Kumar Singh and Karabi Kalita.
5. **Indian design patent (Granted):** Title: Fungicide Coating Seed Treating Box. Design No.: 398482-001, Grant date: 26/10/2023. **Inventors**: Apurva Tripathi, Rutuja Nitin Sonawane, **Akalesh Kumar Verma**, Chetan Sharad Sanap, Sarada Prasad Mohapatra, Shushant Kumar Kaushik.
6. **Indian patent (Granted):** Title of invention: Animal Shell upcycling machine. **Inventors**: Verma, A.K., Shukla, R.K., Singh, S., Prasad, S.S., Ahmed, R. Application Number: 394818-001 (Cbr no.: 211360, Date: 11-09-2023). Design No.: 394818-001, Grant date: 11-09-2023.
7. **Indian patent (Filed):** Title of invention: Mother of pearl (MOP) infused pre-school learning and play kits: A multisensory approach to early education. Application Number: 202331055323, Date of Filing: 17/08/2023. **Inventors**:Verma, A.K., Singh, N.S., Singh, S., Arjun, J., Barthakur, T., Devi, M., Dutta, D., Das, J., Dutta, K., Gogoi, M., Gogoi, R., Singh, R.K. and Paul A.K.

PARTICIPATION & PAPER PRESENTATION IN NATIONAL SEMINAR/SYMPOSIUM

1. Kardong. D.,**Verma A.K**., Yadav R.N.S., Gogoi B.K., Bora T.C. Biochemical and Microbial analysis of Saimond or Po:roapong (Oral presentation) in National Seminar on Biodiversity. Organized by North East Biotechnological Consortium, IIE, Guwahati, 18th to 19th Dec 2007, pp 29.
2. **Verma, A.K**., B. Brahma., T. Rongpi., G. Rosangkima., Amenla., S.B. Prasad. Anticancer activity of different fractions of *Mylabris cichorii* extract in mice (C_3H/He) bearing ascites Dalton's lymphoma. (Poster presentation) in National Seminar on Recent Trends in Phytochemicals & Phytopharmaceuticals Research and Future Prospects. Organized by Dept. of Chemistry, Gauhati University, Gauwahati, 26th-27th March, 2010, pp 56.
3. **Verma, A.K**., S.B. Prasad and M. J. Bordoloi. Zootherapeutics potentials of a blister beetle against murine ascites Dalton's lymphoma. National Seminar on Biodiversity of North East India Issue and Concern. Organized by Regional Centre National Afforestation and Eco- Development Board, NEHU, Shillong, 22nd May, 2010, pp 5.
4. Participated in National seminar entitled" Application of radiation in medical research, organized by Department of Atomic Energy, NEIGRIHM, Shillong" India, 15th May, 2010.
5. **Verma, A.K**., S.B. Prasad and M. J. Bordoloi. Anticancer and Cytotoxic effect of *Mylabris cichorii* extract against Dalton's lymphoma ascites- induced tumor model. National Seminar on Recent Trend in traditional phytotherapy: Safety, Efficacy, Drug discovery and priority issue 17 January, Organized by: Namrup College, Dibrugarh, 2nd -3rd December, 2010, pp 21.
6. Participation in 96th Indian Science Congress, North Eastern Hill University, Shillong, 3rd -4th January, 2009.
7. **Verma, A.K**., Dhrubajyoti Gogoi, M.J. Bordoloi. Ligand-based virtual screening on some of the Anticancer Phytochemicals to develop a novel inhibitor of β-catenin against cancer. National Seminar on Recent Trend in traditional phytotherapy: Safety, Efficacy, Drug discovery and priority issue 17 January, Organized by: Namrup College, Dibrugarh, 2nd -3rd December, 2010, pp 13.
8. **Verma, A.K**., S.B. Prasad and M. J. Bordoloi. Anticancer activity of active fraction of *Mylabris cichorii* extract *in vivo* and *in vitro.* National Seminar on Recent Advances in Synthesis and Catalysis. Organized by Department of chemistry, Dibrugarh University, 10th -12th February, 2011, pp 39.
9. **Verma, A.K**., S.B. Prasad and M. J. Bordoloi. Evaluation of Antitumor potentials of *Mylabris cichorii* (Fabr) and *cassia tora* (Lin) combined extract and their active principle(s) against murine ascites 17anuar's lymphoma. National seminar on plant resource management and conservation strategies in N.E. region. Organized by Department of Botany, Cotton College, Guwahati, 18th -19th February, 2011.
10. **Verma, A.K**., Dhrubajyoti Gogoi, M.J. Bordoloi. Virtual screening to find potent inhibitor of HSP90: An in silico approach to develop potent anticancer drug candidates. National Seminar on Recent Advances in Synthesis and Catalysis. Organized by Department of chemistry, Dibrugarh University, 10th -12th February, 2011, pp 83.
11. **Verma, A.K.** Apoptotic and anticancer activities of Cantharidin isolated from *Mylabris cichorii* (Fab), against Murine Ascites Dalton's lymphoma. 99thISCA, KIIT University, Bhubaneswar, 3rd-7th January 2012, pp 7.
12. **Verma, A.K.** Changes in glutathione and glutathione-related enzymes induces mitochondrial stress and apoptosis in the anticancer activities of cantharidin isolated from red-headed blister beetles, *Epicautahirticornis*and its mechanism of action. 100thISCA, Calcutta University, 3rd-7th January, 2013, pp 8.
13. **Verma, A.K**., S.B. Prasad. Cantharidin inhibits proliferation and induces apoptosis in Ehrlich ascites carcinoma through inhibition of Lactate dehydrogenase enzyme activity. National Seminar on Faunal Diversity and Ecophysiology. Department of Zoologyy, NEHU, 28th-29th February, 2012, pp 63.
14. **Verma A.K.** *In Silico* Drug Design. National Mathematics Day: Application of mathematics in medicine. Organized by: Cachhar Cancer Hospital and Research centre, Silchar-15, Assam, on 20th December, 2014.
15. **Verma, A.K**., S.B. Prasad. Cantharidin mediated biochemical and ultrastructural changes in mitochondria of tumor cells. National Seminar on Faunal Diversity and Ecophysiology. Department of Zoologyy, NEHU, 30 March, 2016, pp 5.

16. **Verma, A**.K. Cantharidin, a promising chemotherapeutic agent from blister beetles, *Epicauta hirticornis* triggers apoptotic cell death and cell cycle arrest in a murine malignant tumor model. Cotton University Symposium held during 27-28 January, 2017.
17. **Verma, A.**K. Traditional healing with blister beetles. National Symposium on Molecular Insect Science. Department of Entomology, Assam Agriculture University, Jorhat, Assam from 6-8 February, 2017.
18. Kataki, B., **Verma, A.K**., Singh, N.S. Changes in *Tinosporia cordifolia* extract mediated biochemical, haematological and histological parameters in Swiss albino mice. National Conference on Ethno-medicine and traditional health practices in North East Region of India. Organized by NIPER, Guwahati, Assam, India. 25th August, 2018, pp. 12.
19. Dutta, K., Singh, N.S., **Verma, A.K**. Effect of *Carica papaya* leaf extract in combination with coconut water on platelets count in chloroquine induced thrombocytopenic mice. National Conference on Ethno-medicine and traditional health practices in North East Region of India. Organized by NIPER, Guwahati, Assam, India. 25th August, 2018, pp. 64.
20. Rana, V., Singh, N.S., **Verma, A.K**. Effect of *Carica papaya* leaf extract on haematological and histopathological parameters in Swiss albino mice. National Conference on Ethno-medicine and traditional health practices in North East Region of India. Organized by NIPER, Guwahati, Assam, India. 25th August, 2018, pp. 94.
21. Saikia, S., Ahmed, R., **Verma, A.K**. *In silico* screening and molecular docking of Phytochemical compounds to identify novel beta-tubulin inhibitor(s) from the Microsporidium, Endoreticulatus sp. Zhenjiang, isolated from *Bombyx mori*. National Conference on Bioresources for Sustaining life and livelihoods in North-East India. Organized by Nowgong College, Department of Zoology, Assam, India. 4th-5th October, 2018, pp.48.
22. Barthakur, T., **Verma, A.K**., Singh, N.S., Rongpi, S. Effect of propolis methanol extract (70%) on biochemical, haematological and histopathological parameters of albino mice. National Seminar on recent advances in bio-Sciences. Organized by Department of Zoology, Pragjyotish College, Assam, India. 21st – 22th September, 2018, pp.43.
23. Boruah, M., Bhuyan, T.,**Verma, A. K**. Identification of novel natural inhibitor(s) of CCR9 using structure-based virtual screening and their wet lab validation. Organized by Down Town University, Panikhaiti, Guwahati, 10-11 November, 2018. pp32.**Best Poster award.**
24. **Verma, A. K**. and Singh, N. S. Innovation in nucleus engineering and golden freshwater designer pearl production: A first report. Assam Biotech Conclave-2022, Organized by Biotech Park, Guwahati and IIT Guwahati. May 20-22, 2022.
25. Gogoi, M, Singh, N.S, **Verma, A.K,**Dutta.K, Devi.M, Das.J, Dutta.D. *In vitro* antitumor activity of Gnetumgnemon leaf extract (methanol: 70%) in Dalton's lymphoma ascites bearing tumor mice. National Seminar on Emerging trends in Biological Sciences: A North East India perspective. Organized by Department of Biotechnology & Bioinformatics, NEHU,Shillong-793022, Meghalaya, India in collaboration with Bio-Resources Development Centre(BRDC),Shillong &BioNestBioincubatorfacility,NEHU, Tura Campus, Meghalaya,28th February-1st March,2023, pp 71.
26. Singh, R.K., **A.K. Verma.**, A.K. Paul and N.S. Singh. Influence of nucleus materials on nacre layer synthesis leading to high quality fresh water pearl formation. Two-Day International Seminar on Climate Change: Impact and Resilience. Organized by Department of Zoology, Assam Don Bosco University, Sonapur-782402, Assam, in collaboration with Zoological Society of Assam, 27-28th February 2023.
27. Devi, M., N.S. Singh and A.K. Verma. An in vitro approach to investigate the antitumor potential of Phlogacanthusthyrsiformis against Dalton's Lymphoma Ascites (DLA) cells. 67th Annual Technical session of Assam Science Society, 2023 cum National seminar on Current Developments in Science and Technology. Organized by Bhattadev University, Bajali, Pathsala,6th April,2023., pp. 56
28. Devi, M., N.S. Singh and A.K. Verma. An in vitro antitumor potential of Adhatodavasica leaf extract against Dalton's Lymphoma (DL) cells. National seminar on Ethnopharmacology for Bioeconomy: The New Paradigm. Organized by CSIR-North East Institute of Science and Technology, Jorhat. SFE-Jorhat Local chapter in association with society of Ethnopharmacology, India.28th-30th November,2023., pp. 73

29. Dutta, D., **A.K. Verma** and N.S. Singh. *In vivo* assessment of the therapeutic potential of *Cordyceps militaris* methanolic extract against murine malignant cancer cell line. National Seminar on "Ethnopharmacology for Bioeconomy: The New Paradigm". Organized by CSIR-North East Institute of Science & Technology, Jorhat, SFE-Jorhat Local Chapter in association with Society for Ethnopharmacology, India, 28th-30th November, 2023., pp. 96

PAPER PRESENTATION IN INTERNATIONAL SEMINAR

1. **Verma, A.K**., S.B. Prasad and J. Arjun. Synergistic anticancer activity of *Mylabris cichorii* and C*assia tora* extract against Dalton's ascites lymphoma bearing mice. International conference on recent trend in medicinal and aromatic plant researches. Department of Life sciences and Bioinformatics, Assam University, Assam, 1-5 December, 2010, pp 63.
2. **Verma A.K.** and Prasad S.B. Blister beetles and their active compound, Cantharidin isolated from *Mylabris cichorii* (Fab), as cancer chemopreventive agent against Ehrlich ascites carcinoma. International Seminar on Bioresources and Human sustenance. Cotton College, Guwahati, 20-22 October, 2011, pp 84.
3. Brahma B, Prasad S.B and **Verma A.K**. Anti-tumor activity of some traditional medicinal plants from Assam against murine ascites Dalton's lymphoma. International Seminar on Bioresources and Human sustenance. Cotton College, Guwahati, 20-22 October, 2011, pp 187.
4. Kalita S, Prasad S.B and **Verma A.K**. Modulatory effect of Ascorbic acid (Vitamin- C) on Chlorambucil-mediated antitumor activity against murine ascites Dalton's lymphoma. International Seminar on Bioresources and Human sustenance. Cotton College, Guwahati, 20-22 October, 2011, pp 189.
5. Prasad S.B. **and Verma A.K.** Zootherapy with blister beetle, *Mylabris cichorii and* its isolated compound, cantharidin against murine tumor model. International seminar on Natural Product Research & Development. Jadavpur University, Kolkata, 1-3 March, 2012, pp 56.
6. Kaliyappan, R.K., **Verma, A.K**., Rao, K.M. Arene ruthenium complexes containing di-(2-pyridyl) ketone 2,4-dinitrophenylhydrazone ligand: synthesis, molecular structure, anticancer activity against Ehrlich ascites carcinoma and molecular docking with cancer target protein. International Conference on Biological Inorganic Chemistry. Department of Chemistry, Periyar University, February 20-22, 2013, pp 128.
7. Prasad S.B. **and Verma A.K.** Studies on the cantharidin-mediated antitumor activity and toxicity in tumor-bearing mice. 2nd International summit on toxicology, Hampton Inn Tropicana, Las Vegas, NV, USA. October 7-9, 2013, pp115.
8. **Verma A.K.** and Prasad S.B. Cytotoxic and mutagenic effects of Cantharidin, A type of terpenoid isolated from red-headed blister beetle (*Epicauta hirticornis*) on the growth of normal and T- cell lymphoma. International Conference on harnessing natural resources for sustainable development- Global trend, Cotton College, Guwahati, Assam. 29- 31 January, 2014, pp 45.
9. **Verma A.K.**, Prasad S.B. and Arjun J. Flow cytometry based study of cantharidin-mediated mitochondrial membrane permeabilization and cell cycle analysis in Dalton's ascites lymphoma *in vivo*. Indo-US Symposium on Clinical Hematological Malignancies, Cachar Cancer Hospital & Reseach Centre, Meherpur, Silchar, Assam. 8-9 February, 2014, pp 16.
10. **Verma A.K.** and Prasad S.B. Apoptotic, necrotic and autophagic effects of cantharidin, a potent antitumor compound isolated from blister beetle, *Epicauta hirticornis* and study of underlying mechanisms of action against murine T-cells lymphoma, International Conference on Entomology, Punjabi University, Patiala, India. 21-23 February, 2014, pp 47.
11. Rajeev Kumar, R. Ravi Kannan, **Akalesh Kumar Verma**, Anuradha Talukdar, Monoj Kumar Deka, Ritesh Tapkire, Litika Vermani, Sankar Kumar Ghosh. High ALDH1, S phase fraction, $p16^{INK4A}$ in esophageal squamous cell carcinoma could predict response to neoadjuvant chemotherapy [abstract]. In: Proceedings of the American Association for Cancer Research Annual Meeting 2017; 2017 Apr 1-5; Washington, DC. Philadelphia (PA): AACR; Cancer Res 2017;77(13 Suppl):Abstract nr 2788. Doi:10.1158/1538-7445.AM2017-2788.

12. **Verma A.K.** Freshwater pearl farming and surgical procedures. Special invited lecture in International virtual event "Applied Biology Research & Innovation Conference 2022 (ABRICON-22)" held during December 03-05, 2022.
13. **Verma A.K.,** Dutta D., Das J. Biological activities of *Cordyceps militaris* (Caterpillar fungus) and its bioactive compounds. Invited lecture in International Conference on "Biodiversity & Conservation-cum-Workshop on Traditional Medicine" held on 14thand 15th December, 2022 at St. Anthony's College Auditorium, Shillong.
14. Dutta, K., Singh, N.S., and **Verma, A.K.** (2022). Integrative approach of molecular docking and experimental studies to evaluate the anti-inflammatory efficacy of *Garcinia pedunculata* Roxb. Ex Buch.-Ham. fruit extract. 5th International Conference on Nutraceuticals and Chronic Diseases 2022 (INCD2022), "Pharmaceuticals and Nutraceuticals for Cancer and Other Chronic Diseases". Organized by Department of Zoology, University of Delhi, Delhi, India under UGC-Special Assistance Program, 7th-9th October, 2022., pp. 117, Taneja Sales Corporation, Delhi-110051, ISBN no: 978-81-954625-9-9.
15. Dutta. D, **A.K. Verma** and N.S. Singh. Anticancer potential of an entomophagous caterpillar fungus, *Cordyceps militaris*: An in vitro and in silico study. International Seminar on Climate Change: Impact and Resilience. Organized by Department of Zoology, Assam Don Bosco University, Sonapur-782402, Assam, in collaboration with Zoological Society of Assam, 27-28 February, 2023, pp 49.
16. Singh, R.K., **A.K. Verma**., A.K. Paul and N.S. Singh. Influence of nucleus materials on nacre layer synthesis leading to high quality fresh water pearl formation. International Seminar on Climate Change: Impact and Resilience. Organized by Department of Zoology, Assam Don Bosco University, Sonapur-782402, Assam, in collaboration with Zoological Society of Assam, 27-28th February 2023, pp 54. **Best Poster award.**
17. Dutta, K.,Singh, N.S., and **Verma, A.K.** (2024). Evaluation of the anti-tumor activity of the bioactive fraction of Garcinia pedunculata (Roxb) fruit against Dalton lymphoma ascites tumor model. International Conference on Traditional Medicine & Phytopharmaceuticals (ICTMP) & 11th International Congress of Society for Ethnopharmacology (SFEC 2024), "Ethnopharmacology in Development of Phytopharmaceutical Drugs". Jointly organized by CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu (J&K), India and Society for Ethnopharmacology (India), 16th-18th February, 2024., pp. 190.
18. Dutta, K.,Singh, N.S., and **Verma, A.K.** (2024). *In-vivo*anti-tumor activity of the bioactive fraction of Garcinia pedunculata (Roxb) fruit against Dalton's lymphoma ascites tumor. International Conference on Traditional Knowledge, "Exploring Traditional Knowledge: Bridging Past and Future". Organized by Nowgong College (Autonomous) Nagaon, Assam, India, 22nd-23rd March, 2024., pp. 26.
19. Gogoi, M., Singh, N. S and **Verma, A.K**. (2024). Antitumor activity of *Gnetumgnemon* leaf extract in Dalton's lymphoma (DLA) bearing mice models. International Conference on "Traditional Knowledge (Exploring Traditional Knowledge:Bridging Past and Future) ". Organized by IQAC,Nowgong College (Autonomous) (Upgraded to Nagaon University, Nagaon-782001,Assam in collaboration with Research and Development Cell, Nowgong College(Upgraded to Nagaon University), 22nd-23rd March, 2023., pp. 30, Ajanta Press, Nagaon, Assam.
20. Singh, R. K., **Verma, A. K.**, Talukdar, M., & Singh, N. S. (2024). Novel method in nucleus engineering leading to improved nacre secretion during pearl nucleation in freshwater mussels. International Conference on Traditional Knowledge"Exploring Traditional Knowledge: Bridging Past and Future". Organized by Nowgong College (Autonomous) Nagaon, Assam, India, 22nd -23rd March, 2024., pp. 118.

INVITEDLECTURE/RESOURCE PERSON

INTERNATIONAL (IN COUNTRY):

1. **Verma, A.K.** Antibody microarray and computational approaches in target identification and drug discovery. In 20th INDO-US Flow Cytometry Workshop Symposium on Advanced Molecular

Techniques. Organized by Cachar Cancer Hospital and Research Centre, Silchar, Assam, India, March 24th -27th , 2019.

2. **Verma A.K.** Development of training needs assessment package including development of selected training modules aiming at climate-resilient management of aquatic resources in the North Eastern Region of India" on 8th December 2022. Organized by The Ministry of Environment, Forest & Climate Change (MoEFCC), Government of India, in partnership with Deutsche Gesellschaft für InternationaleZusammenarbeit (GIZ) is implementing an Indo-German Technical Cooperation project.
3. **Verma A.K.** Freshwater pearl farming and surgical procedures. Special invited lecture in International virtual event "Applied Biology Research & Innovation Conference 2022 (ABRICON-22)" organized by: Indian Consortium for Research & Innovation in Biology (ICRIB), Chandigarh, India and held during December 03-05, 2022.
4. **Verma A.K.** Biological activities of *Cordyceps militaris*(Caterpillar fungus) and its bioactive compounds. Invited lecture inInternational Conference on "Biodiversity & Conservation-cum-Workshop on Traditional Medicine" held on 14th and 15th December, 2022 at St. Anthony's College Auditorium, Shillong.

NATIONAL:

1. **Verma, A.K.** Fundamentals in Bioinformatics and its Application. Organized by Institutional Biotech Hub, Namrup College from 27th-31st, March, 2017.
2. **Verma, A.K.** Fresh water pearl culture, in one-week workshop on skill development and career opportunities in biological sciences. Organized by: B.Borooah College, Date:19thto 24th July, 2021.
3. **Verma, A.K.** Fresh water Pearl culture and human resource development organized byDepartment of Science and Technology (DST) Government of India and State Council of Science, Technology & Environment (SCSTE), Meghalaya "Celebration of Vigyan Utsav as part of the Azadi ka Amrit Mahotsav". Date: 20th October, 2021.
4. **Verma A.K.** Workshop on freshwater pearl farming for enterpreneurship development. Invited by Department of Zoology, University of Science & Technology Meghalaya (USTM), 10th December 2022.
5. **Verma A.K.** Entrepreneurship development workshop on "Freshwater pearl farming cum livelihood generation"held on 17th and 18th February, 2023 at Department of Zoology, University of Science & Technology Meghalaya (USTM).
6. **Verma A.K.** A Value Added Course on "Surgical Procedure of designer pearl farming" held on 11th March, 2023 at Department of Zoology, University of Science & Technology Meghalaya (USTM).
7. **Verma A.K.** Entrepreneurship Development in Pearl Farming, held on 31st March 2023, Organized by Department of Zoology, St. Joseph University, Nagaland.
8. **Verma A.K.** Pearl culture in Freshwater Mussels, held on 12-13 May 2023, Organized by Department of Zoology, B Borooah College, Guwahati-07, Assam.
9. **Verma A.K.** Fresh waterPearl culture for Entrepreneurship Development (Golden Jubilee Lecture Series), held on 13 October 2023, Organized by Department of Zoology, Pub Kamrup College, Baihata Chariali, Kamrup-81, Assam.
10. **Verma A.K.** Sustainable Practices in Freshwater Pearl Farming, Held on 20th February 2024, Organized by Advanced Level Institutional Biotech Hub, B. Borooah College in collaboration with IQAC, B. Borooah College. In a five days' workshop on "Research Methodology in Biological Sciences" during 20th February to 24th February 2024.
11. **Verma A.K.** North East Startup and Entrepreneurs Conclave,Organized by North East Centre for Technology Application and Reach (NECTAR), DST, Govt. of India. Venue: Kalakhetra, Guwahati, Date: 27-28 March 2024.
12. **Verma A.K.** One day workshop in Pearl Farming. Organized by Department of Zoology, Assam Don Bosco University, Assam. Date: 09-05-2024.

13. Fresh water Pearl farming cum entrepreneurship development. Organized by: Assam University, Silchar, Assam. Event: SCIENTIA_5.0, An Annual Science Festival organized by the students and scholars of Science Block, Assam University, Date: 30th and 31st May 2024.

AWARDS/HONOURS/APPRECIATIONS/FELLOWSHIPS

1. **ISCA** (Indian Science Congress Association) Young Scientist Award for the year 2012-2013
2. **Indo-US Exchange Fellowship Award**- February, 2015 (Post Doctoral Fellowship) at Morehouse School of Medicine, Department of Microbiology, Biochemistry and Immunology, Atlanta, Georgia, USA.
3. **Governor Excellent Award** for the year 2020 for best research publications under the category of Science, Organized by Cotton University, May 21st 2022; Chief Guest Governor of Assam, Prof. Jagdish Mukhi.
4. **Talent Search Contest Award-2019** by Guwahati Biotech Park (DBT), Startup Assam and Science & Technology Department, Govt. of Assam (Venue: Assam startup-The Nest, Ambari, Guwahati) entitled "Entrepreneurs development through cultivation of *Cordyceps militaris* and its spawn: The most expensive fungus in the world and development of economically viable synergistic nutraceutical formulations thereof"in GBP's Talent search contest on 20th Nov, 2019.
5. **Talent Search Contest Award-2021** by Guwahati Biotech Park (DBT) and Science & Technology Department, Govt. of Assam entitled "Development of innovative method for nucleus design and implantation in pearl oyster followed by community mobilization and sensitization for the freshwater pearl culture leading to entrepreneurship development" in GBP's Talent search contest on 6th March, 2021.
6. **Assam Startup: Cohort-4:** Selected as one of the incubates in fourth batch under the Assam Startup COHORT 4.0 programme 2022 (Sep 22, 2022), Topic: **Color Designer Pearl Farming**. An initiative by the Industries & Commerce Department, Government of Assam in association with IIM Calcutta Innovation Park.
7. **Recognition of startup** by North East Entrepreneurship Development Program (NEEDP), IIM Calcutta Innovation Park, Joka, Diamond Harbour Road, Kolkata 700104. Registration number: BR103557MC, Startup name: BudEDU Tools, Date: 15 March 2023.
8. **Wiley Top Cited Article 2021-2022 Award**. Chemical Biology & Drug Design Journal. Repurposing potential of FDA-approved and investigational drugsfor COVID-19 targeting SARS-CoV-2 spike and main protease and validation by machine learning algorithm. Among work published in an issue between 1 January 2021-15 December 2022. By: Wiley, Global Leader in Publishing, Education and Research, New Jersey, United States.
9. **Highly cited author award** for the year 2021 by Royal Society of Chemistry, USA for publishing research in the top 5% of highly cited works from Indian institutions, dated 06 Jun 2022.
10. **Product developed:** A nutraceuticals herbal products (*fssai*: Lic. No: 20819003000138) is released into market in the month of September, 2019. The work was carried out between Department of Zoology, Cotton University and Cosmic Farm, Faridabad, India (Under MOU). All the products are presently available in IndiaMART (https://www.indiamart.com/cosmiccordycepfarms/herbal-capsules.html#)
11. M.Sc. (Life Sciences), **First class First** in Zoology, 2007.
12. **UGC Research Fellowship Award**, November, 2009.
13. **UGG Meritorious Fellowship Award** in science for meritorious student F-4-1/2006(BSR)/5- 120/2007(BSR), Dated 20th January'2009.
14. **Best poster presentation Award:** Akalesh Kumar Verma, 2012, Cantharidin inhibit proliferation of Dalton's lymphoma by inhibition…….enzymes activity, North Eastern Hill University in a National seminar on Faunal Diversity and Ecophysiology, 28th -29th February, 2012.
15. **Best poster presentation award:** Monikongkona Boruah, Tandralee Bhuyan, Akalesh K. Verma. Identification of novel natural inhibitor(s) of CCR9 using structure-based virtual screening and their wet lab validation. Organized by Down Town University, Panikhaiti, Guwahati, 10-11 November, 2018. pp32.
16. **Winner of Ideathon # 2:** Bio-Innovation Challenge-2022, "Topic: Innovative in nucleus design and implantation in pearl oysters, followed by community mobilization and sensitization for pearl farming leading to

entrepreneurship development". Dec 30, 2022 Organized by National Institute of Pharmaceutical Education and Research Guwahati (NIPER-G) Sila Katamur, Changsari, Kamrup -781101, Assam, India.

17. **Best poster presentation award:** Singh, R.K., **A.K. Verma.**, A.K. Paul and N.S. Singh. Influence of nucleus materials on nacre layer synthesis leading to high quality fresh water pearl formation. Two-Day International Seminar on Climate Change: Impact and Resilience. Organized by Department of Zoology, Assam Don Bosco University, Sonapur-782402, Assam, in collaboration with Zoological Society of Assam, 27-28th February 2023.
18. **Winner of FAME Biotech 2.0 Hackathon. Title:** Development of educational and learning tools for kids using freshwater mussels shell: An effort towards waste-to-wealth management and circular economy. (Ideation & Prototype Stage), Organized by: Institute of Advanced Study in Science and Technology (IASST), Vigyan Path Garchuk, Paschim, Boragaon, Guwahati, Assam 781035, on 26th April 2023, at IASST Auditorium.
19. **Best poster presentation award:** Dutta, D., **A.K. Verma** and N.S. Singh. *In vivo* assessment of the therapeutic potential of *Cordyceps militaris* methanolic extract against murine malignant cancer cell line. National Seminar on "Ethnopharmacology for Bioeconomy: The New Paradigm". Organized by CSIR-North East Institute of Science & Technology, Jorhat, SFE-Jorhat Local Chapter in association with Society for Ethnopharmacology, India, 28th-30th November, 2023.

Fellows of Scientific Societies

1. Life Member of Assam Science Society (Established: 1953), Guwahati, Assam. Sl. no. 1805, Membership no. 6604 on 07-11-2022.
2. Life Member of "International Organization for Academic and Scientific Development (IOASD)", Membership ID: FMIOASD-109/D/2024. Date of Issue: 22/04/2024. Website: https://ioasd.org/dignitary-fellows/

ORGANIZED SEMINARS/WORKSHOPS/TRAINING

1. Organizing member of Indo-US Clinical Cytometry Symposium and wet labs on **Haematological Malignancies: Challenges & Management Strategies**, 8th -9th February, 2014, Organized by: Dr. S. Krishnamurthi Centre for Research & Education in Cancer, Cachar Cancer Hospital & Research Centre, Silchar, Assam, India.
2. Organizing member of Workshop on **Grossing of Surgical Specimens and standard reporting in Oncology**, 24th -25th November, 2014. Organized by: Department of Pathology, Cachar Cancer Hospital & Research Centre, Silchar, Assam, India and National Cancer Grid, India.
3. Convener in a training program on **Hands on training on flowcytometry data analysis & interpretation**, 21st – 23rd23 January, 2015, Organized by: Dr. S. Krishnamurthi Centre for Research & Education in Cancer, Cachar Cancer Hospital & Research Centre, Silchar, Assam, India.
4. Jt-Convener in a National Conference on **"National Seminar on Recent advances in Zoological research and Integrative biology"**, 27-28 February, 2017 at Cotton University, Assam India.
5. Jt-Convener in a National Workshop on **"Hands on training in basic cellular and bioinformatics techniques"**. 24-25 February, 2017 at Cotton University, Assam India.
6. Jt-Convener in a National Conference on "**National Conference on Green, Sustainable and Evolving Sciences (GSES-2019)** during 28-29 June, 2019 at Cotton University, Assam India.
7. Convener in National webinar on **Pearl culture technology cum entrepreneurship development**, 9-10 September, 2021, organized by Department of Zoology, Cotton University, Guwahati, Assam.
8. Convener in National Training Program on "**Freshwater Pearl Culture for Entrepreneurship Development": Phase-I**, Organized by: Department of Zoology, Cotton University, Guwahati, Assam-01&Indian National Pearl Culture Society, Assam, India. Date of Training– 21-23 October, 2022.

9. Convener in National Training Program on "**Freshwater Pearl Culture for Entrepreneurship Development": Phase-II**, Organized by: Department of Zoology, Cotton University, Guwahati, Assam-01&Indian National Pearl Culture Society, Assam, India. Date of Training– 11th, 12th and 13th November, 2022.
10. Convener in Training program on "Freshwater Pearl Culture for Entrepreneurship Development". Organized by: Department of Zoology, Cotton University, Guwahati-01, Assam, India. A special social welfare program focusing primarily on women empowerment. Date: 8th March 2024; Time: 10AM to 4PM
11. Convener in the workshop on Advance Drug Designing (Package: Discovery Studio, Dassault) Supported by Department of Biotechnology (DBT) Govt. of India. Venue: Cotton University, Organized by the Faculty of Life Sciences. April 4th & 5th, 2024.

ESTABLISHMENT OF ACADEMIC SOCIETY

The **Indian National Pearl Farming Society (INPFS)** is a non-profit organization whose mission is to promote freshwater pearl farming as a viable means of livelihood among Indian farmers, women, startup, entrepreneurs, students, and unemployed youth. Established in 2021 (A/F registration). Founder &President: Dr. Akalesh Kumar Verma, Assistant Professor, Cotton University, Assam, India

https://sites.google.com/view/indiannationalpearlfarmsoc/home

SOCIAL AWARENESS/SERVICES UNDERTAKEN

1. Social awareness on freshwater pearl culture technology cum entrepreneurship development. Served as a **Convener**& organized National webinar on "**Pearl culture technology cum entrepreneurship development"**, 9-10 September, 2021, Venue: Department of Zoology, Cotton University, Guwahati, Assam.
   Weblink of event:
   https://zoology.cottonuniversity.ac.in/notification_details?p=N0Q3QzFkeWZtb05IMlNER2hzU3J5dz09
   The Aim of the event was to increase the awareness and to encourage farmers, students, unemployed youths, Startup and entrepreneurs for freshwater pearl culture. More than 300 participants were attended the event.
2. **Nominated working member of Unnat Bharat Abhiyan, Cotton University, Guwahati, Assam.**
   The Aim of this program is to update nearby villagers/farmers (Guwahati area) about new technology of agriculture and farming. We also train them about technique of pearlfarming, mushroom cultivation, and value addition in agricultural products. The team is also involved in mega plantation drive on environment day.
3. **Establishment of Academic Society**: **The Indian National Pearl Farming Society (INPFS)** is a non-profit academic organization whose mission is to promote freshwater pearl farming as a viable means of livelihood among Indian farmers, students, and unemployed youth. Established in 2021 (A/F registration). **Founder &President:** Dr. Akalesh Kumar Verma, Assistant Professor, Cotton University, Assam, India Website: https://sites.google.com/view/indiannationalpearlfarmsoc/home
4. **Product developed:** A nutraceuticals herbal products (*fssai*: Lic. No: 20819003000138) is released into market in the month of September, 2019. The work was carried out between Department of Zoology, Cotton University and Cosmic Farm, Faridabad, India (Under MOU). All the products are presently available in IndiaMART (https://www.indiamart.com/cosmiccordycepfarms/herbal-capsules.html#)
5. **Human Resource Development:** Hands-on training to UG & PG students, Cotton University about pearl culture technology.

M.SC. PROJECT GUIDED

1. **Monmi Phukan** (Enrolment No: ZOO1563021); successfully completed M.Sc. project report on the "Study of refinery effluents induced biochemical and histopathological changes in gills of freshwater air-breathing fish *Channa punctatus* (Bloch 1973)", Year-2017; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
2. **Bidisha Kataki** (Enrolment No: ZOO1662019); successfully completed M.Sc. project report on "Giloy (*TinosporaCordifoloa*) Extract mediated biochemical, Haematological and Histological alteration in mice", Year-2017; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
3. **Santana Saikia** (Enrolment No: ZOO1562024); successfully completed M.Sc. project report on"Homology modelling and docking studies of beta tubulin protein from the microsporidium, *Endoreticulatus sp.* Zhenjiang from *Bombyx mori*", Year-2017; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
4. **Drishtirupa Phukan** worked as a winter trainee (Internship) under SERB-Fast Track Scheme (ECR/2026/000079), DST, and Government of India. A project report on "Structure based virtual screening and molecular docking for the identification of potential inhibitors against highly expressed CCR9 in prostate cancer", Year-2018; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
5. **Sunny Rongpi** (Enrolment No: ZOO1662020); successfully completed M.Sc. project report on "Study of phytochemical composition of propolis extract and its effect on hematological and histological parameter in mice", Year-2018; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
6. **Darshana Madhukalya** (Enrolment No: ZOO1762015); successfully completed M.Sc. project report on "Study of phytochemical and biological activity of black rice, Chankhao Amubi in Swiss Albio mice", Year-2019; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
7. **Anubhuti Das** (Enrolment No: ZOO1762021); successfully completed M.Sc. project report on "Study of Phytochemical composition of Methanolic extracts of *Purkia timoriana*, Pericarp and biochemical activity", Year-2019; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
8. **Lupamudra Borah** (Enrolment No: ZOO1762020); successfully completed M.Sc. project report on "Study of Structure based virtual screening and molecular docking for identification of bioactive phytochemicals against *Callosobrachus chinensis",* Year-2019; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
9. **Antariksha Das** (Enrolment No: ZOO1862012); successfully completed M.Sc. project report on "Use of novel plant derived cytological dye for staining blood and cancer cells", Year-2020; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
10. **Silpi Sikha Borah** (Enrolment No: ZOO1862023); successfully completed M.Sc. project report on "Study of plants derived dye for cytological staining", Year-2020; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
11. **Swapnil Dey** (ZOO1962024),successfully completed M.Sc. project report on "A review on the role of chemokines in breast cancer pathogenesis: an insight into its functional aspect and therapeutic approaches". Year: 2021; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
12. **Bishal Bigya Kashyap** (Enrolment No: ZOO2062006); successfully completed M.Sc. project report on "Comparision of the extent of attachment of different nucleus on freshwater mussels (*Lamellidens corrianus*)", Year: 2022; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
13. **Annyesha Chakraborty** (Enrolment No: ZOO2062023); successfully completed M.Sc. project report on "Study of effects of *Monopterus cuchia* (Hamilton, 1822) Skin extract on wound healing process in mice", Year-2022; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.

14. **Rushmita Kalita** (Enrolment No: ZOO2062027); successfully completed M.Sc. project report on"TargetingBCL-2 and JAK-2 proteins receptors of Lymphoma with Phytochemicals: An *In silico* Approach*"*, Year-2022; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
15. **Mamtaz Hussain** (Enrolment No: ZOO2062025); successfully completed M.Sc. project report on "Role of temperature in designer freshwater pearl formation in *Lamellidens marginalis* (Lamarck, 1819)", Year-2023; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
16. **Mina Brahma** (Enrolment No: ZOO2162030); successfully completed M.Sc. project report on "Comparison of red blood cell morphometric and haemoglobin concentration in different eco- niche fishes", Year-2023; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
17. **Borsha Borah** (Enrolment No: ZOO2162006); successfully completed M.Sc. project report on "The effect of polluted water effluent on the histological parameter and study of neurons, lipids and dye absorbance of fresh water mussels", Year-2023; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
18. **Bhuyashi Baidya**, a student of Department of Zoology, PSGR Krishnammal College for women, Tamil Nadu, India successfully completed her M.Sc. project work (Internship) on "Optimizing pearl cultivation techniques: Evaluating the role of coated and uncoated nuclei in freshwater designer pearl production"; Year-2024; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
19. **Mahua Shil (Enrolment no: ZOO2262019)**; successfully completed M.Sc. project work on "Exploring the anticancer effect of the methanolic extract of *Curcuma aromatica* rhizomes: *In vitro* study on DLA cells and toxicity assessment in murine model" Year 2024; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
20. **Bhagyashree Talukdar (Enrolment no: ZOO2262002)**; successfully completed M.Sc. project work on "Exploring the economic viability and technological advances in designer pearl production using freshwater mussels" Year 2024; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.
21. **Abhinandan Choudhury (Enrolment no: ZOO2262002);** successfully completed M.Sc. project work on "Investigating the anticancer potential of methanolic extract of *Cyperus rotundus* rhizome: *In vitro* analysis on DLA cells and toxicity evaluation in mouse model" Year 2024; Guided by **Dr. Akalesh Kumar Verma**, Department of Zoology, Cotton University.

FACULTY DEVELOPMENT PROGRAM

Sl. No.	Name of the Course	Duration (From – To)	Conducting Institute /HRDC
1	Orientation Program	29thMay–25th Jun, 2017	HRDC-Gauhati University
2	Refresher Course in Life Sciences	17th – 30th October, 2019	HRDC-Gauhati University
3	Faculty Development Program on "Basic and advanced Proteomics Approaches".	15th– 26th February 2021	IIT Bombay
4	One-week national workshop on "Fresh water Pearl culture and management"	12-21 February 2021	ICAR-CIFA, Odisha
5	International Workshop on "Tools and Techniques to Perform Molecular Modelling and Computer-Aided Drug	11-17 January, 2021	National Institute of Pharmaceutical Education and Research Guwahati (NIPERG), Changsari, Kamrup, Guwahati 781101, Assam (India).

	Design" (MMTT-2021).		
6	Faculty Development Program on ICT Tools for Effective Teaching and Learning	14th– 18th March 2022	Tezpur University
7	Faculty Development Program on "Understanding, scouting, protecting and utilizing Intellectual Property from North East"	23rd– 27thMay 2022	NECTAR & TIFAC
8	National level Faculty Development Program on Research Methodology using ChatGPT and AI Tools.	21st– 29th September 2023	PG Department of Computer Application, IQAC and Lincoln University College Marian Research Centre (LUCMRC) in association with Kerala State Higher Education Council (KSHEC).
9	One week national workshop on intellectual property rights, academic ethics, and innovation for entrepreneurship development (NWIPR-2023).	6th-10th November 2023	Handique Girls' College and Patent Information Centre (PIC), ASTEC.
10	Three months Certificate course in 2D & 3D designing in AUTOCAD.	January-March 2024	Computer Education Centre (CEC), Maligaon, Guwahati-12, Assam

DATA SUBMITTED

1. Crystallographic data for the structure analysis of 2,6-Dimethyl-4,10-dioxatricyclo-[5.2.1.$0^{2,6}$]decane-3,5-dionehas been deposited with the Cambridge Crystallographic Data Center, CCDC No. 835281. Director, CCDC, 12 Union Road Cambridge CB2 1EZ UK (fax: +44 1223 336033; email: deposit@ccdc.cam.ac.uk; http://www.ccdc.cam.ac.uk).

RESEARCH PROJECT

Sl no.	Project title	Funding agency, duration and years	Role	Project cost (Lakh)
1.	Study of anticancer potential of North East Indian propolis and isolation of possible active principle(s).	DST ECR/2016/000079 (2016-2019)	Project Investigator (PI)	20.35
2.	Study of traditionally used dyes yielding plants for staining cells and cellular components and identification thereof: An eco-friendly and non-toxic alternative	S & T Division, ASTEC, Guwahati, Assam, India ASTEC/S&T/1614/7/2018-19/1580-1584	Project Investigator (PI)	1.4

	method.	(2019-2021)		
3	Structure-based pharmacophore modeling and biological evaluation of novel CCR9 inhibitor(s) for the treatment of prostate cancer	CU/REGOFF/2017/012/7211 Cotton University (In house) (2019-2020)	Co-PI	1
4	DBT-BUILDER: Cotton University Interdisciplinary Life Science Programme for Advance Research and Education focusing Medicinal Plant Research and Biodiversity Conservation.	DBT BT/INF/22/SP45376/2022 (2022-2027)	Project Investigator (PI)	500 (5 Cr.)
5	Design of positively charged biomaterial/biopolymer coated pearl nucleus, and implantation into freshwater pearl oyster followed by survivability study and pearl quality assessment.	CU/Dean/R&D/2019/05/1995 Cotton University (In house) (2022-2023)	Project Investigator (PI)	1
6	Innovation in colored pearls production, and community mobilization and sensitization for the freshwater pearl culture leading to entrepreneurship development in Northeast India	North East Centre For Technology Application and Reach(NECTAR) TOSS-2022 (2023-2025)	Project Investigator (PI)	6.5
7	Innovative in nucleus design and implantation in pearl oysters, followed by community mobilization and sensitization for pearl farming leading to entrepreneurship development	BIO-NEST National Institute of Pharmaceutical Education and Research Guwahati (NIPER-G) (2023-2024)	Project Investigator (PI)	1
8	Development of educational and learning tools for kids using North East Indian freshwater mussels shell ‘s crafts: An effort towards waste-to-wealth management and circular economy	North East Entrepreneurship Development Program (NEEDP), IIM Calcutta Innovation Park, Joka, Diamond Harbour Road, Kolkata 700104. **Recognition of startup:** Registration number: BR103557MC, Startup name: BudEDU Tools, Date: 15 March 2023	Project Investigator (PI)	1
9	Winner of FAME Biotech 2.0 Hackathon. Title: Development of educational and learning tools for kids using freshwater mussels shell: An effort towards waste-to-wealth management and circular economy.	Institute of Advanced Study in Science and Technology (IASST) (2023-2024)	Project Investigator (PI)	0.45
10	Study of pearl-producing potential of freshwater mussels from different parts of Assam and their commercial utilization for quality pearl production	CU/Dean/R&D/2019/02/23/69 Cotton University (In house) (2022-2023)	Co-PI	1
11	Creating educational and gaming resources for kids utilizing shell crafts from North East Indian freshwater mussels: A step towards waste-to-	CU/Dean/R&D/2019/02/23/73 Cotton University (In house) (2022-2023)	Project Investigator (PI)	1

	wealth management and the promotion of a circular economy.			

JOURNALS REVIEWER

1.Journal of Ethnopharmacology, **2.** Anticancer Agent in Medicinal Chemistry, **3.** Current Science **4.** Current Nutraceuticals, **5.** Anti-Infective Agents, **6.** Bulletin of the World Health Organization, **7.** Plos One, **8.** Journal of Biomolecular Structure and Dynamics, **9.** Philippine Journal of Science, **10.** Indian Journal of Experimental Biology, **11.** Indian Journal of Traditional Knowledge, **12.** Journal of Molecular Structure, **13.** Frontiers in Bioscience-Landmark, **14.** Metabolites, **15.** Molecules, **16.** Life, **17.** Metabolites, **18.** Biomedicines, **19.** International Journal of Environmental Research and Public Health, **20.** Pharmaceuticals, **21.** Cells, **22.** Medicina, **23.** Journal of Clinical Medicine, **24.** International Journal of Molecular Sciences, **25.** Journal of Pharmacy and Pharmacology, **26.** Journal of Inorganic Biochemistry, **27.** Inorganic chemistry communications, **28.** Inorganica Chimica Acta, **29.** Journal of inorganic biochemistry, **30.** Current Pharmaceutical Design

NATIONAL & INTERNATIONAL RESEARCH COLLABORATIONS

1. Cachhar Cancer Hospital & Research Centre, Silchar, Assam, India, **2.** North East Cancer Hospital and Research Institute, Guwahati, Assam, India, **3.**Cosmic Cordyceps Farm, Faridabad, India, **4.** Department of Chemistry, NIT, Silchar, Assam, **5.** Bodoland University, Kokrajhar, Assam, India, **6.** Drug Research Institution (CDRI), Lucknow, India, **7.** Department of Bioinformatics, Stella Maris College (Autonomous), Tamil Nadu, India, **8.** Chemistry Department, Cotton University, Assam, India, **9.** Chemistry Department, North Eastern Hill University, Meghalaya, India, **10.** Maastricht University, Netherland, **11.** Morehouse School of Medicine, Atlanta, USA, **12.** Gyeongsang National University (GNU), Republic of Korea, **13.** Universidade Federal de Alfenas, Alfenas, Minas Gerais, Brazil, **14.** Maastricht University, MD Maastricht, Netherlands, **15.** Comsats University Islamabad, Pakistan, **16.** Universitat de les Illes Balears, Spain.

COTTON UNIVERSITY PROFESSIONAL RESPONSIBILITY

1. Served as one of the core committee members for reviewing and drafting application for NIRF Ranking in the year 2022.Duty assigned by: Honorable Vice Chancellor, Cotton University (CU).
2. Actively involved in a committee formed for web data entry, content migration, photo/video editing and Assamese translation of the University website in the year 2021.Duty assigned by: Honorable Vice Chancellor, Cotton University (CU).
3. Temporarily engaged as Guest Resource person at CU for conducting part-time classes in the Department of Molecular Biology and Biotechnology (MBBT) w.e.f. 15.02.24 to till now. Duty assigned by: Respected Registrar, Cotton University (CU).
4. Served as a drafting committee member in a project implementation group constituted for PURSE-2024, DST scheme, Cotton University, March 2024. Duty assigned by respected Dean R&D, Cotton University.
5. Served as a “Placement and Career Counseling Cell” committee member constituted to look into the various aspect of placement and career counseling of students of the University in the year 2021.Duty assigned by: Respected Registrar, Cotton University (CU).
6. Member of Intellectual Property Rights Cell, Cotton University since 2021.Duty assigned by: Honorable Vice Chancellor, Cotton University (CU).

7. Served as an active committee member constituted to examine the Micro Research Projects submitted by the UG 6th semester and PG 4th semester students of Cotton University in the year 2022. Duty assigned by Honorable Vice Chancellor& Director of Students Welfare, CU
8. Member of General Purchase Committee of CU as per clause 32.1 of the First Statute of CU [vide Section 23(ix) of the Cotton University Act, 2017] in the year 2023.Duty assigned by Honorable Vice Chancellor.
9. Active member of Annual In-house Advisory Committee for "DBT Sponsored M.Sc. course in the department of MBBT, offered by Cotton University" in the year 2023.Duty assigned by Honorable Vice Chancellor.
10. Member of Committee constituted to select two internship positions (ASTEC Funded Project: Evaluation of ecosystem services provided by the wetland and the forests to the local communities in three villages adjoining Deepor Beel) against advertisement No: Recruitment/CU/2023/11 in the year 2023.
11. Served as an active committee member constituted to examine the Micro Research Projects submitted by the UG 6th semester and PG 4th semester students of Cotton University in the year 2023. Duty assigned by Honorable Vice Chancellor & Director of Students Welfare, CU.
12. Served as a Board of Study member for UG and PG of the department of Zoology, Cotton University. Date: 08-01-2018, Duty assigned by Academic Registrar (i/c), CU.
13. Member of Institutional Biosafety Committee (IBSC), Cotton University. March 9, 2020.

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DECLARATION

I do hereby declare that the statements made in this curriculum vitae are true, complete and correct to the best of my knowledge and belief.

Place: Guwahati

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