CURRICULUM VITAE

Dr. ANJU SINGH

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https://scholar.google.co.in/citations?user=uHumVMwAAAAJ&hl=en
Research Gate id: https://www.researchgate.net/profile/Anju-Singh-15

Academic Qualifications

2008-2014	**Ph. D: Chemistry** (March 2014) Department of Chemistry, University of Delhi, Delhi-110007, India Thesis Entitled- **"Structural Polymorphism and Recognition of DNA G-Quadruplexes"** **Supervisor:** Prof. Shrikant Kukreti, Nucleic Acids Research Lab, Department of Chemistry, University of Delhi, Delhi, India.
2002-2004	**M. Sc: Organic Chemistry (65.91%)** Veer Bahadur Singh University, Jaunpur, India
1994-1997	**B. Sc: (66.5 %)** Veer Bahadur Singh University, Jaunpur, India Concentrations: Chemistry, Botany, Zoology

Career Profile

1. **Hindu College, Department of Chemistry, University of Delhi, India from Oct, 2023-Till Now, https://hinducollege.ac.in**

Designation: Assistant Professor (Guest)
Subjects Taught:

- B. Sc. (H) (V^{th} Sem): DSE-Green Chemistry – (Theory & Practical)
- B.Sc. (PSC) GE-Practical
- B. Sc. (H) (VI^{th} Sem): Organic Chemistry - Organic Spectroscopy, Carbohydrates, Dyes (Theory)
- B.Sc. (PSC) (VI^{th} Sem): Organometallic, Bioinorganic, Polynuclear Hydrocarbon and Spectroscopy (Practical)

2. **Ramjas College, Department of Chemistry, University of Delhi, India from Sep 2017 onwards, https://www.ramjas.du.ac.in**

Designation: Assistant Professor (Adhoc)

Subjects Taught:

- B. Sc. (H) (VIth Sem): Organic Chemistry - Organic Spectroscopy, Carbohydrates, Dyes (Theory and Practical)
- B. Sc. (H) (Vth Sem): Organic Chemistry –Chemistry of Biomolecules (Theory & Practical)
- B. Sc. (H) (IVth Sem): Organic Chemistry - Heterocyclic Compounds (Theory & Practical)
- B. Sc. (LS) (Vth Sem): Pharmaceutical Chemistry (Theory)
- B. Sc. (H) FYUP (IIIrd Sem): Organic Chemistry (Carboxylic Acids and their Derivatives-Theory & Practical)

3. **Keshav Mahavidyalaya, Department of Chemistry, University of Delhi, India from 4th Aug, 2016-26th Nov, 2017 Website: https://keshav.du.ac.in**

Designation: Assistant Professor (Guest)

Subjects Taught:

- B. Sc. (CBCS) (Physical Sciences- Ist Sem): Organic Chemistry (General Organic Chemistry & Aliphatic Hydrocarbons- Theory & Practical)
- B. Sc. (CBCS) (Physical Sciences- Ist Sem): Organic Chemistry (Theory & Practical)
- B. Sc. (CBCS) (Physical Sciences- IInd Sem): Organic Chemistry (Functional Group Organic Chemistry-Theory)
- B. Sc. Mathematical Sciences- Vth Sem): Green Chemistry (Theory)
- B. Sc. (H) Mathematics- VIth Sem): Green Chemistry (Theory)

4. **Shyam Lal College, Department of Chemistry, University of Delhi, India from 4th Feb, 2015 – 19th July, 2016, Website: https://slc.du.ac.in**

Designation: Assistant Professor (Adhoc)

Subjects Taught:

- B. Sc. (H) FYUP (IIIrd Sem): Organic Chemistry (Carboxylic Acids and their Derivatives-Theory & Practical)
- B. Sc. (H) FYUP (VIth Sem): Organic Chemistry -Biochemistry-Chemistry of Biomolecules (Theory and Practical)
- B. Sc. (H) FYUP (IVth Sem): Organic Chemistry (Heterocyclic Compounds)
- B. Sc. (Physical Sciences- IIIrd Sem): Physical Chemistry (Solutions, Conductance, Electrochemistry)
- B. Sc. (Physical Sciences- IInd Sem): Physical Chemistry (Thermodynamics, Equilibria)
- B. Sc. (CBCS) (Physical Sciences- Ist Sem): Organic Chemistry (General Organic Chemistry & Aliphatic Hydrocarbons- Theory & Practical)
- B.A. (P) (Histrory- Ist Sem): Environmental Studies
- B. Sc. (CBCS) (Physical Sciences- IInd Sem): Environmental Studies

Administrative Roles/Duties

- Member of Departmental NAAC Core committee, Ramjas College, DU **(2018 – July 2023)**

- Member of Purchase/Stock verification committee, Ramjas College, DU **(2021-2022, 2022-2023)**
- Member of Green and Sustainable safe lab practices committee, Ramjas College, DU **(Till July 2023)**
- Member of Lab upliftment committee, Ramjas College, DU **(2018-2019)**
- Member of Admission Committee, Ramjas College, DU
- Member, Fine Arts Committee, Shyamlal College, DU
- Member of Debating Society, Shyamlal College, DU

Research Interest

Biophysical and Biochemical Aspects of Multistranded Nucleic Acids (G-Quadruplex, i-Motif structures) and their interaction with Ligands/ Peptides.

Research Publications

(A) Articles (Peer Reviewed/Scopus Cited/ Web of Science/ UGC Listed)
[h – index: 15, i10-index: 21, Citations: 2527, Total Impact Factor (IF): 137.24, Avg Impact Factor: 4.159]

1. Piyush Verma, Lajpreet Kaur, Priyanka Aswal, **Anju Singh,** Rashmi Pandey, Himanshu Ojha, Mallika Pathak **(2024)**
   Binding Interactions of Vildagliptin with Pepsin: A multi-spectroscopic and in-silico approach and a comparative account with metformin
   Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy
   304:123368. doi: 10.1016/j.saa.2023.123368. Epub 2023 Sep 6.2023-09, DOI: 10.1016/j.saa.2023.123368 **(IF – 4.831)**

2. **Anju Singh,** Samiksha Kukal, Neha Kanojia, Mahak Singh, Luciano Saso, Shrikant Kukreti, Ritushree Kukreti **(2023)**
   Lipid Mediated Brain Disorders: A Perspective
   Prostaglandins and Other Lipid Mediators **(2023), 167, 106737. https://doi.org/10.1016/j.prostaglandins.2023.106737 (IF – 3.892)**

3. Nishu Nain, **Anju Singh**, Shoaib Khan, Shrikant Kukreti **(2023)**
   G-quadruplex formation at human DAT1 gene promoter: Effect of cytosine methylation
   Biochemistry and Biophysics Reports **34 (2023) 101464.** https://doi.org/10.1016/j.bbrep.2023.101464 **(IF - 2.7)**

4. Lajpreet Kaur, **Anju Singh**, Anupama Dutta, Himanshu Ojha **(2023)**
   Multispectroscopic studies of binding interaction of phosmet with bovine hemoglobin. ***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*** **(2023)** 24 March 2023, 122630. https://doi.org/10.1016/j.saa.2023.122630 **ISSN: 1386-1425 (IF – 4.831)**

5. Shoaib Khan, **Anju Singh**, Nishu Nain, Shrikant Kukreti **(2022)**
   Alkali cation mediated topology displayed by an exonic G-rich sequence of *TRPA1* gene. ***J Biomol Struct Dyn.*** **(2022)** 1-12. doi: 10.1080/07391102.2022.2150686. **ISSN: 0739-1102 (IF – 3.392)**

6. Samiksha Kukal, Shivangi Bora, Neha Kanojia, Pooja Singh, Priyanka Rani Paul, Chitra Rawat, Shakti Sagar, Naveen Kumar Bhatraju, Gurpreet Kaur Grewal, **Anju Singh**, Shrikant Kukreti, Kapaettu Satyamoorthy, Ritushree Kukreti.
Valproic acid-induced upregulation of multidrug efflux transporter ABCG2/BCRP via PPARα-dependent mechanism in human brain endothelial cells.
***Molecular Pharmacology* (2023)** 103 (3) 145-157; DOI: https://doi.org/10.1124/molpharm.122.000568. **ISSN: 0026-895X (IF – 4.436)**

7. Lajpreet Kaur, Afreen Jahan Rahman, **Anju Singh**, Mallika Pathak, Anupma Datta, Rahul Singhal, Himanshu Ojha **(2022)**
Binding studies for the interaction between hazardous organophosphorous compound phosmet and lysozyme: Spectroscopic and In-silico analyses.
Journal of Molecular Liquids 2022, 355, 118954. https://doi.org/10.1016/j.molliq.2022.118954. **ISSN: 0167-7322 (IF – 6.633)**

8. Piyush Verma, Lajpreet Kaur, Priyanka Aswal, **Anju Singh**, Himanshu Ojha, Afreen Jahan Rahman, Rahul Singhal, Anjani K. Tiwari, Mallika Pathak **(2022)**
Luminescence studies of binding affinity of vildagliptin with bovine serum albumin
Journal Of Biomolecular Structure and Dynamics 2022, *1-12*, https://doi.org/10.1080/07391102.2022.2043939. **ISSN: 0739-1102 (IF-3.392)**

9. **Anju Singh**, Ritushree Kukreti, Luciano Saso, Shrikant Kukreti **(2022)**
Mechanistic Insight in Oxidative Stress Triggered Signaling Pathways and Type 2 Diabetes
***Molecules* 2022,** *27*(3), 950. https://doi.org/10.3390/molecules27030950. **ISSN 1420-3049 (IF – 4.927)**

10. Savita Joshi, **Anju Singh**, Shrikant Kukreti **(2022)**
Porphyrin induced structural destabilization of a parallel DNA G-quadruplex in human *MRP1* gene promoter.
***Journal of Molecular Recognition*, 2022**; e2950. https://doi.org/10.1002/jmr.2950 ISSN**: 1099-1352 (IF – 2.891)**

11. Nishu Nain, **Anju Singh,** Shoaib Khan, Mahima Kaushik, Shrikant Kukreti **(2022)**
Structural Switching/ polymorphism by sequential base substitution at quasi-palindromic SNP site (G→A) in LCR of *Human β-globin* Gene cluster.
***International Journal of Biological Macromolecules* 2022, 201, 216–225.** https://doi.org/10.1016/j.ijbiomac.2021.12.142. **ISSN: 0141-8130 (IF- 8.025)**.

12. Manish Kumar Mishra, Samiksha Kukal, Priyanka Rani Paul, Shivangi Bora, **Anju Singh**, Shrikant Kukreti, Luciano Saso, Karthikeyan Muthusamy, Yasha Hasija, Ritushree Kukreti **(2022)**
Insights into structural modifications of valproic acid and their pharmacological profile.
***Molecules* 2022, *27*(1), 104;** https://doi.org/10.3390/molecules27010104. **ISSN 1420-3049 (IF – 4.927)**

13. Shoaib Khan, **Anju Singh**, Nishu Nain, Srishty Gulati, Shrikant Kukreti **(2021)**
Sequence-Specific Recognition of a Coding Segment of Human *DACH1* gene via short Pyrimidine/Purine oligonucleotides.
***RSC Advances* 2021, 11, 40011-40021.** https://doi.org/10.1039/D1RA06604H

ISSN: 2046-2069 (IF – 4.036)

14. Afreen J Rahman, Lajpreet Kaur, Mallika Pathak; **Anju Singh**, Piyush Verma, Rahul Singhal, Vinod Kumar, Himanshu Ojha **(2021)**
Spectroscopic Studies of Binding interactions of 2-Chloroethylphenyl Sulphide with Bovine Serum Albumin.
***Journal of Molecular Liquids* 2021, 340, 117144**. https://doi.org/10.1016/j.molliq.2021.117144. **ISSN: 0167-7322 (IF – 6.633)**

15. Afreen Jahan Rahman, Deepti Sharma, Deepanshu Kumar, Mallika Pathak, **Anju Singh**, Vinod Kumar, Himanshu Ojha **(2021)**
Interaction of Bovine Serum Albumin with an organophosphorus compound (Phosmet): Spectroscopic and molecular modelling study.
***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 2021, 244, 118803.** http://doi.org/10.1016/j.saa.2020.118803. **ISSN: 1386-1425 (IF-4.098).**

16. Deepti Sharma, **Anju Singh**, Mallika Pathak, Lajpreet Kaur, Vinod Kumar, Bal G. Roy, Himanshu Ojha **(2020)**
DNA binding and antiradical potential of ethyl pyruvate: Key to the DNA radioprotection.
***Chemico-Biological Interactions* 2020**, **332, 109313**. https://doi.org/10.1016/j.ijbiomac.2019.10.110. **ISSN: 0009-2797 (IF- 5.192)**

17. Anju Singh, Savita Joshi and Shrikant Kukreti **(2020)**
Cationic Porphyrins as Destabilizer of a G-quadruplex located at the Promoter of Human Myosin Beta (*MYH7β*) gene.
***Journal of Biomolecular Structure and Dynamics* 2020, 38, 16, 4801-4816.** https://doi.org/10.1080/07391102.2019.1689850.**ISSN: 0739-1102 (IF-3.392)**

18. Deepti Sharma, **Anju Singh**, Shrikant Kukreti, Mallika Pathak, Lajpreet Kaur, Vinod Kaushik, Himanshu Ojha **(2020)**
Protection by Ethyl Pyruvate against Gamma Radiation Induced Damage in Bovine Serum Albumin.
***IJBM* 2020, 150, 1053-1060.** doi: 10.1016/j.ijbiomac.2019.10.110.**ISSN: 0141-8130 (IF- 8.025)**.

19. Anju Singh, Ritushree Kukreti, Luciano Sasso, Shrikant Kukreti **(2019)**
Oxidative Stress: A Key Modulator in Neurodegenerative Diseases
***Molecules* 2019**, **24, 1583,** https://doi.org/10.3390/molecules24081583. **ISSN 1420-3049 (IF – 4.927)**

20. Anju Singh, Ritushree Kukreti, Luciano Sasso, Shrikant Kukreti **(2019)**
Oxidative Stress: Role and Response of Short Guanine Tracts at Genomic Locations
Int. J. Mol. Sci.* 2019, *20(17), 4258; https://doi.org/10.3390/ijms20174258.s **ISSN 1422-0067 (IF – 6.208)**

21. Navneet Sharma, Rita Kakkar, Prerna Bansal, **Anju Singh**, Himanshu Ojha, Dharam Pal Pathak, Rakesh Kumar **(2019)**
Host–guest complexation studies of p-tertbutylcalix[4]arene against ions of interest for radiological decontamination.

***Inorganica Chimica Acta* 2019, 484, 111-124**. DOI: 10.1016/j.ica.2018.09.007 **(ISSN: 0020-1693) (IF - 2.264)**

22. J. Shankaraswamy, Shikhar Tyagi, **Anju Singh**, Daisuke Miyoshi & Sarika Saxena **(2019)**
Metal sensitive and DNA concentration dependent structural rearrangement of short oligonucleotide into large suprastructures.
***Journal of Biomolecular Structure and Dynamics* 2019, 37, 9, 2211-2218**. DOI: 10.1080/07391102.2018.1484816 **(ISSN: 0739-1102) (IF - 3.392)**

23. Damini Sood, Neeraj Kumar, **Anju Singh,** Vartika Tomar, Sujata Dass, Ramesh Chandra **(2019)**
Deciphering the binding mechanism of Noscapine with Lysozyme: Biophysical and Chemoinformatics Approaches
***ACS Omega* 2019, 4, 14, 16233-16241.** https://doi.org/10.1021/acsomega.9b02578 **(ISSN: 2470-1343) (IF – 4.132)**

24. Anju Singh and Shrikant Kukreti **(2018)**
Homoduplex to i-motif structural switch exhibited by a Cytosine rich strand of *MYH 7 heavy chain β* gene promoter at physiological pH.
***RSC Advances* 2018,** 8**, 34202-34214.** https://doi.org/10.1039/C8RA05179H **(ISSN: 2046-2069) (IF – 4.036)**

25. Anju Singh and Shrikant Kukreti **(2018)**
A Triple Stranded G-Quadruplex Formation In The Promoter Region of Human *Myosin β* (*MYH7*) Gene.
***Journal of Bimolecular Structure & Dynamics* 2018, 36, 11, 2773-2786.** https://doi.org/10.1080/07391102.2017.1374211 **ISSN: 0739-1102, (IF - 3.392)**

26. Damini Sood, Neeraj Kumar, Garima Rathee, **Anju Singh**, Vartika Tomar and Ramesh Chandra **(2018)**
A Step Closer to Preclinical Study: Mechanistic Interaction of Bromo-Noscapine with Bovine Serum Albumin employing Spectroscopic and Chemoinformatics Approaches.
***Scientific Reports* 8, 16964, 2018.** https://doi.org/10.1038/s41598-018-35384-6 **(ISSN: 2045-2322) (IF – 4.379)**

27. Mahima Kaushik, **Anju Singh**, Mohan Kumar, Swati Chaudhary, Saami Ahmed and Shrikant Kukreti. **(2017)**
Structure-Specific Ligand Recognition of Multistranded DNA Structures.
***Current Topics in Medicinal Chemistry* 2017,17, 2, 138-147**. **ISSN: 1568-0266. (IF – 3.57)**

28. Sharda Pasricha, Deepti Sharma, Himanshu Ojha, Pragya Gahlot, Mallika Pathak, Mitrabasu Chillar, Raman Chawla, Sugandha Singhal, **Anju Singh**, Rajeev Goel, Shrikant Kukreti, Shefali Shukla. **(2017)**
Luminescence, circular dichroism and in silico studies of binding interaction of synthesized naphthylchalcone derivatives with bovine serum albumin.
***Luminescence* 2017, 32, 7, 1252-1262. May 16.** doi: 10.1002/bio.3319. **ISSN 1522-7243 (IF – 2.613)**

29. Deepti Sharma, Himanshu Ojha, Mallika Pathak, Bhawna Singha, Navneet Sharma, **Anju Singh**, Rita Kakkar, Rakesh K Sharma. **(2016)**
Spectroscopic and molecular modelling studies of binding mechanism of Metformin with Bovine Serum Albumin.
Journal of Molecular Structure **2016, 1118, 267-274.** https://doi.org/10.1016/j.molstruc.2016.04.030 (**ISSN: 0022-2860) (IF -3.841)**

30. Mallika Pathak, Rashmi Mishra, Paban K. Agarwala, Himanshu Ojha, Bhawna Singh, **Anju Singh**, Shrikant Kukreti. **(2016)**
Binding of Ethyl Pyruvate to bovine serum albumin: Calorimetric, Spectroscopic and molecular docking studies.
Thermochimica Acta **2016, 633, 140-148.** https://doi.org/10.1016/j.tca.2016.04.006 **(ISSN: 0040-6031) (IF – 3.115)**

31. Mahima Kaushik, Shikha Kaushik, Kapil Roy, **Anju Singh**, Swati Mahendru Mohan Kumar, Swati Chaudhary, Saami Ahmed, Shrikant Kukreti. **(2016)**
A bouquet of DNA structures: Emerging diversity.
Biochemistry and Biophysics Reports **2016, 5, 388–395.** https://doi.org/10.1016/j.bbrep.2016.01.013. **ISSN: 2405-5808. (IF-2.613)**

32. S. Mishra, A.K. Gupta, P. Malhotra, P.K. Singh, R. Pathak, **A. Singh**, S. Kukreti, H.K. Gautam, S. Javed and Raj Kumar. **(2014)**
Protection Against Ionizing Radiation Induced Oxidative Damage to Structural and Functional Proteins by Semiquinone Glucoside Derivative Isolated from Radioresistant Bacterium *Bacillus* sp. INM-1.
Current Biotechnology **04/2014; 3(1):117-126., (ISSN: 2211-551X (Online)**

33. Mahima Kaushik, Manoj Prasad, Shikha Kaushik, **Anju Singh** and Shrikant Kukreti. **(2010)**
Structural Transition from Dimeric to Tetrameric i-motif, Caused by The Presence of TAA at the 3′- End of Human Telomeric C-Rich Sequence.
Biopolymers **2010, 93, 2, 150-160.** https://doi.org/10.1002/bip.21313. **ISSN No. 1097-0282. (IF- 2.505)**

(B) <u>Conference Proceedings</u>

1. **Anju Singh**, Arkaja Goswami, Savita Joshi, Shrikant Kukreti. In Search of G-Quadruplex Ligand. **Conference Proceeding in National Conference NCC2016 "Environment & Harmonious Development" on 7th-8th April, 2016, pp 102, ISBN 9789385824012.**

2. **Anju Singh**, Arkaja Goswami. Nanomedicines: An Overview. **Indo-Portuguese Workshop on Emerging Trends of Nanotechnology in Chemistry and Biology**, organized by Department of Chemistry, Hansraj College and Deshbandhu College, University of Delhi in Association with Centro de Quimica da Madeira (CQM), University of Madeira, Portugal on **12th -13th February, 2016**. **J. Mat. Nano Sci., 2016, 3 (1), S1-S23.**

3. **Anju Singh**, Mahima Kaushik, Savita Joshi and Shrikant Kukreti. G-Quadruplex Polymorphism: An Attempt to Explore the Association between G-tracts and Intervening T's. **Journal of Proteins & Proteomics, Volume:** No.3 (2012) **Issue No. :**2 **Pages:** JPP 19-65 **(Special Issue) 2012, ISSN No**. 0975-8151.

4. **Anju Singh**, Mahima Kaushik, and Shrikant Kukreti. Preferential Recognition of DNA G-Quadruplex Topologies. **Journal of Proteins & Proteomics, Volume:** No.6 (2015) **Issue No. :**1 **Pages:** JPP 34 **(Special Issue) 2015, ISSN No**. 0975-8151

5. Mahima Kaushik, **Anju Singh**, and Shrikant Kukreti, "Duplex to Cruciform transition in a Quasipalindrome present in Human Neuronal Growth Regulator 1 (*NEGR1*) gene, associated with Cancer", **Journal of Proteins & Proteomics, Volume:** No.6 (2015) **Issue No. :**1 **Pages:** JPP 91-92 **(Special Issue) 2015, ISSN No**. 0975-8151.

Conference/ Oral Presentations

1. Recognition Of G-Quadruplexes Formed at Promoter Location of Human Myosin Heavy Chain B Gene (Myh7β) By Natural Alkaloids
   Anju Singh and Shrikant Kukreti
   6th World Congress on Nanomedical Sciences organized by Jamia Hamdard & University of Delhi **Jan 7th-10th, 2019 (Oral Presentation).**

2. Recognition and destabilization of Parallel G- quadruplex present in Promoter location of Human *MYH7*gene
   Anju Singh and Shrikant Kukreti
   Emerging Trends in Drugs Development and Natural-Products (ETDDNP-2018) organized by the Department of Chemistry, University of Delhi, Delhi, India, **Jan 12th - 14th, 2018. (Oral Presentation)**

3. A Novel Parallel Triple Stranded G-Quadruplex Formation In Promoter Region of Human Myosin β (MYH7) Gene
   Anju Singh, Mahima Kaushik and Shrikant Kukreti
   International Congress on Friedreich's ataxia & DNA Structure in Health and Disease, Organized by DNA Society of India & Department of Biochemistry, All India Institute of Medical Sciences, Delhi, India, **March 11st – 13th, 2015 (Oral Presentation)**.

4. Preferential Recognition of DNA G-Quadruplex Topologies
   Anju Singh, Mahima Kaushik, and Shrikant Kukreti
   National Symposium on Biophysics and Golden Jubilee Meeting of The Indian Biophysical Society, Organized by the Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, India, **February 14th-17th, 2015**. **(Oral Presentation)**

Conference Poster Presentations

1. Recognition and Stabilization of a G-quadruplex Motif at Human *TRPA1* Gene.
   Shoaib Khan, **Anju Singh**, Priyanka Phogat, Shipra Singh, Sakshi Rana, Bharti Lekhwar, Shrikant Kukreti
   International Conference on Crossroads of Chemistry, Biology and Atmospheric Environment: A Modern Prospective, organized by Department of Chemistry, University of Delhi in collaboration with Academic-Scientific Organizations held from **Feb 26th - Feb 28th , 2024**.

2. Metal ion-mediated stabilization of G-quadruplex at coding DNA segment of Human *TRPA1* Gene

Shoaib Khan, **Anju Singh**, Nishu Nain, Priyanka Phogat, Shipra Singh, Shrikant Kukreti
60th ACC 2023 - Annual Convention of Chemists, Indian Institute of Technology-Delhi, Delhi, heeld on **Dec 20th - 21st, 2023**. **(Best Poster Award)**

3. Alkali metal ion mediation of G-quadruplex stability at coding region of Human *TRPA1* Gene
Shoaib Khan, **Anju Singh**, Nishu Nain, Priyanka Phogat, Shipra Singh, Shrikant Kukreti
Organic Chemistry Symposium 2023, Thieme, Department of Chemistry, University of Delhi, Delhi, **Oct 25th, 2023**.

4. Structural switching/polymorphism by sequential base substitution at quasi-palindromic SNP site (G→ A) in LCR of human β-globin gene cluster
Nishu Nain, **Anju Singh**, Shoaib Khan, Mahima Kaushik, Shrikant Kukreti
International Conference on Recent Advances in Nanomedical Sciences (RANMS-2022) organized by Institute of Nano Medical Science (INMS) & Institution of Eminence (IOE), University of Delhi, **June 22nd - 23rd, 2022. (Best poster Award)**

5. Sequence-specific recognition of a coding segment of human DACH1 gene via short pyrimidine/purine oligonucleotides
Shoaib Khan, **Anju Singh**, Nishu Nain, Srishty Gulati, Shrikant Kukreti
International Conference on Recent Advances in Nano Medical Sciences (RANMS-2022), Vallabhbhai Patel Chest Institute, University of Delhi, **June 22nd - 23rd, 2022.**

6. Structural polymorphs of a quasipalindrome located in NEGR1 oncogene
Mahima Kaushik, **Anju Singh**, S. Kukreti
ACBR Symposium on Frontiers in Biomedical Research -2015 (FBR-2015), **Oct 29th - Oct 31st, 2015**.

6. Structural Switch from Duplex to Cruciform in A Quasipalindrome Present in Promoter Region of Human Otog Gene
Mahima Kaushik, **Anju Singh** and Shrikant Kukreti
International Congress on Friedreich's ataxia & DNA Structure in Health and Disease, Organized by DNA Society of India & Department of Biochemistry, All India Institute of Medical Sciences, Delhi, India, **April 11st– April 13th, 2015 (Best Poster Award).**

7. Duplex to Cruciform transition in a Quasipalindrome present in Human Neuronal Growth Regulator 1 (*NEGR1*) gene, associated with Cancer
Mahima Kaushik, **Anju Singh** and Shrikant Kukreti
National Symposium on Biophysics and Golden Jubilee Meeting of The Indian Biophysical Society, Organized by the Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, India, **February 14th-17th, 2015**. (**Poster)**

8. A Novel Three Stranded G-Quadruplex Formation In Promoter Region of Human Myosin *(MYH7)* Gene
Anju Singh and Shrikant Kukreti
20th ISCBC International Conference on Chemistry and Medicinal Plants in Translational Medicine for Healthcare Organized by Department of Chemistry, University of Delhi, India, **March 1st – 4th, 2014**. **(Poster)**

9. Diverse Topology of G-Quadruplexes
Anju Singh, Mahima Kaushik, Savita Joshi and Shrikant Kukreti,
International Conference "Emerging Trends in Development of Drugs and Devices jointly organized by the Department of Chemistry, University of Delhi and three National Academies of India, **Jan 21st-23rd, 2013. (Poster)**

10. G-Quadruplex: Incredible Topology
Anju Singh, Mahima Kaushik, Savita Joshi and Shrikant Kukreti
National Symposium on Frontiers of Biophysics, Biotechnology & Bioinformatics" & 37th Annual Meeting of Indian Biophysical Society (IBS), Department of Biophysics and Centre for Excellence in Basic Sciences, University of Mumbai, India, **Jan 13th -16th , 2013**. **(Poster)**

11. G-Quadruplex Polymorphism: An Attempt to Explore the Association between G-tracts and Intervening T's
Anju Singh, Mahima Kaushik, Savita Joshi and Shrikant Kukreti,
International Interdisciplinary Science Conference (I-ISC, 2012) On Protein Folding and Diseases, Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, Jamia Nagar, New Delhi, India, **December 8th -10th, 2012 (Poster)**

12. Self-Association of a Ligand: A Cautionary Aspect of DNA Targeting
Shikha Kaushik**,** Mahima Kaushik, **Anju Singh**, Anuradha and Shrikant Kukreti**,** National Symposium on Recent Trends in Biophysics, Department of Physics, BHU, Varanasi, India, **February,13th-15th, 2010**.

13. Self-Association of Coralyne: A Plausible Drawback for DNA Targeting
Shikha Kaushik, Mahima Kaushik, **Anju Singh,** Anuradha and Shrikant Kukreti**,** International Symposium on Trends in Drug Discovery and Development, Department of Chemistry, University of Delhi, Delhi, India, **January, 5th-8th, 2010. (Best Poster Award)**

Book Authored

Kaushik, S. & **Singh, A. (2023)**. **Biomolecules: From Genes to Proteins. Berlin, Boston: De Gruyter.** https://doi.org/10.1515/9783110793765. **Published: March 20, 2023**
ISBN: 9783110793765

Book Chapter

1. **Anju Singh**, Md. Shoaib, Nishu Nain, Shrikant Kukreti **(2022)**
Chapter 7: Deciphering Plausible Role of DNA nanostructures in Drug Delivery
In The Book: Fiber and Textile Engineering in Drug Delivery Systems
Elsevier ISBN: 9780323961172.pp 215-240. https://www.elsevier.com/books/fiber-and-textile-engineering-in-drug-delivery-systems/sharma/978-0-323-96117-2. 1st Edition - January 27, 2023

2. **Anju Singh**, Ritushree Kukreti, Shrikant Kukreti **(2021)**
Oxidative Stress and Cellular Dysfunction in Neurodegenerative Disease
In the Book: Neurodegenerative Diseases Biomarkers: Towards Translating Research to Clinical Practice, *Springer (Nature) Series* **Neuromethods, Volume 173, PP 121-154.**

Print ISBN-978-1-0716-1711-3, Online ISBN 978-1-0716-1712-0.
https://doi.org/10.1007/978-1-0716-1712-0_6.

3. Md Shoaib, **Anju Singh**, Srishty Gulati, **Shrikant Kukreti (2021)**
Chapter 8: Mapping Genome by using Bioinformatics data and tools
In the Book: Chemoinformatics and Bioinformatics in the Pharmaceutical Sciences
Elsevier ISBN: 978-0-12-821748-1, 245-278.
https://doi.org/10.1016/C2019-0-04122-2

4. **Anju Singh**, Srishty Gulati, Md. Shoaib, **Shrikant Kukreti (2021)**
Chapter 10: Unveiling the molecular basis of DNA-Protein Structure and function: An *in-silico* View
In the Book: Chemoinformatics and Bioinformatics in the Pharmaceutical Sciences
Elsevier, ISBN: 978-0-12-821748-1, 305-328.
https://doi.org/10.1016/C2019-0-04122-2

5. Srishty Gulati, **Anju Singh**, Md. Shoaib, **Shrikant Kukreti (2021)**
Chapter 12: Computational and Functional Annotation at Genomic Scale: Gene Expression and Analysis
In the Book: Chemoinformatics and Bioinformatics in the Pharmaceutical Sciences
Elsevier ISBN: 978-0-12-821748-1, 361-388.
https://doi.org/10.1016/C2019-0-04122-2

E-Content/E-Modules

1. Module title: To determine the activity of α-amylase, contributed in the development of Teacher's e-Kit (e-content in Four Quadrants Format) in Chemistry at GAD-TLC of MHRD under the PMMMNMTT scheme (2020).
2. Module title: To study the effect of temperature on the activity of α-amylase, contributed in the development of Teacher's e-Kit (e-content in Four Quadrants Format) in Chemistry at GAD-TLC of MHRD under the PMMMNMTT scheme (2020).
3. E-Content of Chemistry in UGC Programme egpathshala for Post-Graduation Students (2013-2014)

Research Project

The current knowledge of G quadruplex structure is suggestive of its involvement in anti-tumour therapeutics and oncogene expression. In order to have insight about involvement of G quadruplex structure in ailments, it is imperative to understand the structural aspect of G-rich motifs in varied solution condition. By keeping importance and involvement of these G-rich sequences in biological processes, many G-rich sequences in exonic region and promoter locations along with their recognition by peptides are proposed for the study by using biochemical (PAGE) and biophysical (UV, UV-Tm, CD, Fluorescence) techniques.
Funded by: IOE, D.U.

Amount: 5 Lakhs
Role: Co-PI

Faculty Development Programme/ Refresher Course/ Add-On Course

- One Week Faculty Development Programme on "Sensory Science in Education: Fragrance and Flavour Awareness" Date: **April 1 - 6, 2024,** Organized by Department of Chemistry, Hindu College, University of Delhi in collaboration with Mahatma Hansraj Malaviya Mission Teacher Training Centre (MH-MMTTC), Hansraj College, University of Delhi Under the Aegis of DBT Star College Scheme.
- One Week National Faculty Development Program on "Safer and Greener Chemistry Labs", **19 July – 25 July 2022**, Organized by GAD-TLC of MHRD under the PMMMNMTT scheme and SGTB Khalsa College, University of Delhi.
- Attended and completed online one-week **Faculty Development Programme** (Equivalent to Refresher Course) on **"Environmental Sciences and Public Health"** from **1st – 5th Feb, 2022**, organized by **Kirori Mal College**, **University of Delhi** in Collaboration with **Mizoram University**, under the aegis Pandit Madan Mohan Malviya National Mission on Teachers and Training (PMMMNMTT) Ministry of Education, Government of India.
- Attended and completed online two-week **Faculty Development Programme** (Equivalent to Refresher Course) on **"Chemistry -The Catalyst for Change"** from **14th – 28th July, 2021**, organized by Teaching Learning Centre, Ramanujan College, University of Delhi in Collaboration with Department of Chemistry, Miranda House, University of Delhi, under the aegis of Ministry of Education Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT).

Organization of Workshops and Seminars/ Resource Person

- Workshop on 'Lab skill development.' 3rd-4th February 2021, organized by Department of Chemistry, Ramjas College, University of Delhi.
- **Resource Person** at the **Faculty Development Programme (FDP) organized by** Department of Chemistry, Daulat Ram College, DU, India, 15th June-22nd June, 2017.
- **Resource Person** at the **winter workshop "Skill Development in Science and Technology"**, Department of Chemistry, Shyam Lal College, University of Delhi, DU, India (28th Dec-31st Dec 2015).

Participation in Seminar

1. Member of organizing committee of RSC International Conference and Workshop on "Twelve Principles of Green Chemistry and UN-SDGs, organized by Department of Chemistry, Hindu College, University of Delhi, **9th -10th Nov, 2023.**

2. Member of organizing committee of "International Conference on Recent Trends in Biological and Chemical Sciences"ICRTBCS-2023 Organized by Shri Ramswaroop Memorial University and Hindu College, University of Delhi, **25th Nov, 2023.**

3. Participated in International Conference on, "Recent Trends in Drug Discovery and Development" organized by Department of Chemistry, Maitreyi College, University of Delhi under the aegis of IQAC, held on **8th -9th Oct, 2021.**

4. Webinar entitled, "Overview of Intellectual Property Rights and Its Relevance in Research and Development" organized by Department of Chemistry, University of Delhi held on **24th Feb., 2022.**

5. National Webinar entitled, "Understanding Gender Discrimation and Aiming for a Gender Just World" organized by Department of Chemistry, Ramjas College, University of Delhi, held on **16th Feb., 2022.**

6. International Webinar on "Post-COVID challenges and opportunities for the Chemist" jointly organized by Indian Science Congress Association (Delhi Chapter) and Department of Chemistry, University of Delhi, held on **28th December, 2021**.

7. Participation in International Webinar on World Science Day for Peace and Development organized by Department of Chemistry, Ramjas College University of Delhi, Delhi, under aegis of IQAC, on Antibiotics: Are they friends or foes? Held on **10th November 2021**.

8. Participation in International Workshop on World Mental Health Day entitled Understanding Mental Health Crisis and Dealing with It, held on **10th October 2021**, organized by Department of Chemistry, Ramjas College, University of Delhi, Delhi, under the aegis of IQAC.

9. Participated in International Conference on, "Recent Trends in Drug Discovery and Development" organized by Department of Chemistry, Maitreyi College, University of Delhi under the aegis of IQAC, held on **8th -9th Oct, 2021**.

10. Participated in Colloquium: International Lecture Series on "Biomolecular Chemistry" conducted by Kirori Mal College, University of Delhi, Delhi on **17th Sep, 2021**.

11. Participation in Webinar entitled Protecting Environment and Energy Sustainability by using Locally Available Renewable Resources-A Right Way To Mitigate Climate Change, held on World Ozone Day, **September 16th, 2021**, organized by Department of Chemistry, Ramjas College, University of Delhi, under the aegis of IQAC.

12. Participation in National Webinar on Gender and Development: 21st Century Prospective on **18th August 2021**, organized by Gender Sensitization Committee, Ramjas College, University of Delhi, Delhi under the aegis of IQAC.

13. Participated in Webinar on, "Understanding Plagiarism Detection Software Ouriginal" organized by University of Delhi in association with eGalactic Pune on **30th July, 2021**.

14. Participation in One day International Science Webinar entitled, "Chemistry for Sustainable Human Life -Essentials of New Education Policy" under the aegis of IQAC, Ramjas College, University of Delhi, Delhi, India **28th July, 2021**.

15. Participated in One Day Online National Webinar entitled, "Implementation of Academic Bank of Credits" organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) of Ministry of Education on **10th July, 2021**.

16. Participated in One Day National Webinar entitled **"Unravelling the National Education Policy 2020"** organized by Guru Angad Dev Teaching Learning Centre SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching of **MHRD** held on **9th August, 2020.**

17. Participated in the Faculty Development Programme National Webinar entitled, "e-Content Development Methodology. Four Quadrant Model, OERs and Copyright Issues" organized by Guru Angad Dev Teaching Learning Centre SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching of MHRD held on 15th May, 2020

18. Participated in Webinar on "Adsorption Technology for the Treatment of Waste Water" Conducted by Enliven Archive on **4th May, 2020**.

19. Participated in National Workshop on, "Molecular Docking, Dynamics & Biologics Discovery (Schrodinger)," organized by Department of Chemistry, University of Delhi, Delhi-110007, sponsored by Schrodinger Bangalore-560086, India on **9th -10th August, 2018**.

20. Participated "ACS on Campus" event jointly organized by Department of Chemistry and ACS in University of Delhi, on **Feb. 5th 2018**.

21. Participated in Two days National Seminar on "Emerging Green Technology and Technical Terminology," MHRD Program, organized by Ramjas College, University of Delhi, Delhi-110007, **13th –Feb. 14th, 2019**.

22. Participated in National Workshop on, "Molecular Docking, Dynamics & Biologics Discovery (Schrodinger)," organized by Department of Chemistry, University of Delhi, Delhi-110007, sponsored by Schrodinger Bangalore-560086, India on **9th -10th August, 2018.**

23. Participated "ACS on Campus" event jointly organized by Department of Chemistry and ACS in University of Delhi, on **5th Feb. 2018**.

24. Participated in International Seminar on "Effects of Pollution on Human Health" jointly organized by Department of Chemistry, University of Delhi and Indian Academy of Biomedical Science on **Dec 1st, 2017**.

25. Participated in Workshop on Green Chemistry Courses, held during the International Conference on "Advancing Green Chemistry: Building a Sustainable Tomorrow," jointly

Organized by Green Chemistry Network Centre, Department of Chemistry, University of Delhi and Hindu College, University of Delhi, **Oct. 3rd -4th, 2017**.

26. National Conference on "Role of Analytical Sciences in Sustainable Development", March 4-5, 2016 Organized by Hansraj College, University of Delhi in Association with Indian Society of Analytical Scientists-Delhi Chapter (ISAS-DC) and Petrotech Society.

27. Genomeet Delhi 2012: A Decade of Genomics, CSIR Institute of Genomics & Integrative Biology, Delhi, India, 30th Decembe2011 – 1st January 2012.

28. 3rd Indo- Italian Seminar on "Green Chemistry", Department of Chemistry, University of Delhi, Delhi, India, 9th December, 2009.

29. 13th ISCB International Conference on Interplay of Chemical and Biological Sciences: Impact on Health and Environment, Department of Chemistry, University of Delhi, Delhi, India, 26th February-1st March, 2009.

30. Indo – French Symposium on "Biomolecular Chemistry", Department of Chemistry, University of Delhi, Delhi, India, 4th March, 2009.

31. National Hematology Update-VII, Department of Hematology, All India Institute of Medical Sciences, New Delhi, India, February 23-24, 2008

Memberships:

- Lifetime Member of Indian Biophysical Society (IBS), Membership Number-831,
- Lifetime Member of DNA Society of India (DSI),
- Lifetime Member of Society of Biological Chemists (India) (SBC) Membership Number- 3585

Reviewing

- JBMT (Willey)
- Life Sciences (Elsevier)

Other Activities

- Participation in the Workshop on "Maintaining Healthy Lifestyle and Hygiene" Women Development Committee (2020-2021) under the aegis of IQAC, Ramjas College, University of Delhi, Delhi, India **13th Feb 2021**.
- Participated in One day National Webinar/Seminar entitled, "Unravelling the National Education Policy 2020" Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on teachers and teaching (PMMMNMTT) of MHRD, 9th August 2021.
- **External Examiner** for M. Tech/ B. Tech. Courses in Amity University, Noida (2016-2017)

- Educational Trip for UG students, **Environmental Engineering, Keshav Mahavidyalaya, DU,** to **CPCB** (Central Pollution Control Board), Delhi, 6th June 2017.
- **Co-Editor**, Conference Proceeding of UGC sponsored National Conference NCC2016 on "Environment & Harmonious Development", Department of Chemistry, Shyam Lal College, University of Delhi, Delhi, India.
- **Assistant Co-Ordinator**, College Placement cell, **Shyamlal College, DU**.
- Assistant Co-Ordinator, Educational Trip for UG students, **Department of Chemistry, Shyam Lal College, DU,** to **NIFTEM** (National Institute of Food Technology Entrepreneurship and Management), Sonepat, Haryana, 12th Oct 2015.
- **Assistant Co-Ordinator,** Seminar on **"Role of Chemistry in Food and Technology" 28th Sep. 2015**, Department of Chemistry, Shyam Lal College, University of Delhi, Delhi.
- Member, Organizing Committee, College Fest, and Seminar **"Rasayanika 2015 & Chemical Society Seminar 2015",** Department of Chemistry, Shyam Lal College, University of Delhi, Delhi, India, (31st March-1st April 2015).
- Demonstrator at **Good Practice Stall of Chemistry Department**, University of Delhi, Delhi, India, **Antardhvani 2014** (14th Feb to 16th Feb 2014)
- **Demonstrator** at **Good Practice Stall of Chemistry Department**, University of Delhi, Delhi, India **Antardhvani 2013** (22nd Feb-24th Feb 2013)
- **Demonstrator** at the **Workshop on Theory & Practical Course "Biochemistry & Environmental Chemistry" [B.Sc. (H) Chemistry (CHHT514 & CHHP 514)**, Department of Chemistry, University of Delhi, India, (2nd July-7th July, 2012).

Techniques Known

- Gel- Electrophoresis
- Uv-Vis Spectroscopy
- Uv-Thermal Denaturation
- Circular Dichroism
- Fluorescence Spectroscopy
- Time –Resolved Fluorescence Spectroscopy
- Bioinformatics (NCBI, UCSC, EPD, QUADPARSER, CLUSTAL OMEGA, TRANFAC, Alibaba@2.0)
- FTIR
- DLS

Computer and Software Proficiency

Origin Pro (8 and 9), Chem Draw, Chem Sketch, MS Office, Adobe Photoshop, End Note

Summary of Research Work (Department of Chemistry, D.U., Delhi)

My research work is focused on the biophysical and biochemical aspects of G-quadruplexes and C-tetraplexes (i-motif) present at various genomic locations and their interaction with natural and synthetic ligands and peptides. My study involved extraction of G-rich sequences from the promoter location of Human Myosin Gene (*MYH7-β-Gene*) with the help of bioinformatics (NCBI BLAST) and characterization of the structures adopted by these

sequences in physiological condition. We established a novel structure and its destabilization by ligand. This gene is responsible for the familial cardiomyopathy i.e. Cardiac arrest at early stage of life. My findings might enhance knowledge about the role of this novel structure in the regulation of this gene. Their role in various biological processes like replication, transcription, recombination and repair etc. draw attention of scientist all over the world. G-quadraplexes also play a substantial role in cancer biology.

Personal Details

Date of birth:	July1, 1978
Sex:	Female
Nationality:	Indian
Marital Status:	Married
Languages Proficiency:	English, Hindi (Speak, Read and Write)

Declaration

I hereby declare that the information given above is true to the best of my knowledge and belief and nothing has been hidden.