

Name: Dr. Vikas Jaitak
Designation: Assistant Professor, Department of Pharmaceutical Sciences and Natural Products, Central University of Punjab, Bathinda
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Education :

Degree/ Certificate	University /Board	Year	Subject/ Specialization
Ph. D.	Institute of Himalyan Bioresource Technology (CSIR), Palampur (HP)/ GNDU, Amritsar	2011	Natural Product Chemistry/Medicinal Chemistry
B.Ed	Himachal Pradesh University, Shimla	2004	Education
M.Sc.	Guru Nanak Dev University, Amritsar	2003	Chemical Sciences

Experience :

Position	Period
Assistant Professor, Department of Pharmaceutical Sciences and Natural Products), Central University of Punjab , Bathinda, India	July 2011-Till date

Citations of Research Publications

My research publications have been cited **2552** times with **h-index** of **27** and **i10-index** of **45** (Source: Google Scholar 09 September, 2022). Total Impact Factor = 228

Research Areas

- Bio-assay Guided Isolation and Characterization of Bioactive compounds from Medicinal and Aromatic Plants for Anticancer, Antioxidant, Anti diabetic and Antimicrobial activities
- Development of new analytical procedures for determination of bioactive compounds and their quality control
- Design and Synthesis of Indole and Coumarin Based Heterocyclic Analogs as Anticancer Agent

Professional Recognition/Awards/Scholarship

- Featured in top 2% scientist across globe listed by Stanford University 2021
- Reviewer for SERB-Core Grants Program
- Co-Chairperson in National Seminar on Socio-Legal & Other Challenges for the prevention of Drug Abuse in India: Existing Approaches and Agenda of Reforms at Central University of Punjab, Feb 6-7, 2020
- Research Grant Award 2020-21 at Central University of Punjab, Bathinda

- Research Grant Award 2018-19 at Central University of Punjab, Bathinda
- Research Grant Award 2017-18 at Central University of Punjab, Bathinda
- Research Grant Award 2015-16 at Central University of Punjab, Bathinda
- Research Grant Award 2014-15 at Central University of Punjab, Bathinda
- CSIR-Senior Research Fellowship, Dec 2007
- National Eligibility Test-JRF, June 2007
- National Eligibility Test-LS, Dec 2005
- National Eligibility Test-LS, June 2003

Peer recognition

Editorial Board Member of Journals:

Mini-Reviews in Medicinal Chemistry

Anti-Cancer Agents in Medicinal Chemistry

Reviewer of Journals:

Bioorganic Chemistry

Bioorganic & Medicinal Chemistry

European Journal of Medicinal Chemistry

Bioorganic Chemistry

Natural Product Research

Annals of Microbiology

Medicinal Chemistry Research

Journal of Agricultural and Food Chemistry

African Journal of Pharmacy and Pharmacology

Pharmaceutical Biology

Phytotherapy Research

Phytochemistry

RSC Advances

Mini-Review in Medicinal chemistry

International Journal of Food Sciences and Technology

Expert Review of Respiratory Medicine

Anticancer Agents in Medicinal Chemistry

Synthetic Communications

Inorganica Chimica Acta

Current Drug Targets

Current Medicinal Chemistry

Fitoterapia

Frontiers in Bioengineering and Biotechnology

Publications

1. Kumar A, Kalra S, Jangid K, Jaitak, V. (2022) Flavonoids as P-glycoprotein inhibitors for multidrug resistance in cancer: An *In-silico* approach. Journal of Biomolecular Structure and Dynamics (Accepted) [*Impact factor (IF)*=5.3].

2. Das A, Lavanya KJ, Nandini, Kaur K, Jaitak V. (2022) Effectiveness of Selective Estrogen Receptor Modulators in Breast Cancer Therapy: An Update. *Current Medicinal Chemistry* (Accepted) [*Impact factor (IF)*=4.7].
3. Anju, Kumar A, Yadav P, Navik U, Jaitak, V. (2022) Chemical Composition, *In vitro* and *In silico* evaluation of essential oil from *Eucalyptus tereticornis* leaves for lung cancer. *Natural Product Research* (Accepted) [*Impact factor (IF)*=2.8].
4. Sharma A, Singh A, Priya A, Kaur M, Gupta VK, Jaitak V, Banerjee B. (2022). Trisodium citrate dihydrate catalyzed one-pot pseudo four-component synthesis of fully functionalized pyridine derivatives. *Synthetic Communications* (Accepted) [*Impact factor (IF)*=2.0].
5. Rani A, Yadav DS, Kumar A, Jaitak V, Bast F. (2022). In vitro evaluation of antiproliferative and antioxidant activities of methanolic extracts of *Gracilaria corticate* and *Gracilaria foliifera* against breast cancer cells. *Applied Biological Research* (Accepted).
6. Sahil, Kaur K, Jaitak V. (2022) Thiazole and Related Heterocyclic Systems as Anticancer Agents: A Review on Synthetic Strategies, Mechanisms of Action and SAR Studies. *Current Medicinal Chemistry* (Accepted) [*Impact factor (IF)*=4.53].
7. Kumar A, Gupta KB, Dhiman M, Arora S, Jaitak V. (2021) New pentacyclic triterpene from *Potentilla atosanguinea* Lodd. as anticancer agent for breast cancer targeting estrogen receptor- α . **Natural Product Research** Oct 4;1-6. doi: 10.1080/14786419.2021. 1986495 [*Impact factor (IF)*=2.861].
8. Kulkarni S, Kaur K, Jaitak, V. (2021) Recent Developments in Oxazole Derivatives as Anticancer Agents: Review on Synthetic Strategies, Mechanism of Action and SAR studies. **Anti-cancer Agents in Medicinal Chemistry**, DOI: **10.2174/1871520621666210915095421**. [*Impact factor (IF)*=2.505].
9. Arya G, Kaur K, Jaitak, V. (2021) Isoxazole derivatives as anticancer agent: A review on synthetic strategies, mechanism of action and SAR studies. **European Journal of Medicinal Chemistry**, 113511. [*Impact factor (IF)*=6.51]
10. Devi N, Kaur K, Biharee A, Jaitak V. (2020) Recent Development in Indole Derivatives as Anticancer Agent: A Mechanistic Approach. **Anti-cancer Agents in Medicinal Chemistry**, 21(14):1802-1824. doi:10.2174/1871520621999210104192644 [*Impact factor (IF)*=2.505]
11. Tanwar AK, Dhiman N, Kumar A, Jaitak V. (2020) Engagement of Phytoestrogens in Breast Cancer Suppression: Structural Classification and Mechanistic Approach. **European Journal of Medicinal Chemistry**, 213, 113037. <https://doi.org/10.1016/j.ejmech.2020.113037> [*Impact factor (IF)* = 6.51].
12. Sharma A, Kumar A, Jaitak V. (2020) Pharmacological and Chemical Potential of *Cassia fistula* L- A Critical Review. **Journal of Herbal Medicine**, 26, 100407. <https://doi.org/10.1016/j.hermed.2020.100407> [*Impact factor (IF)* = 3.01]

13. Biharee A, Sharma A, Kumar A, Jaitak V. (2020) Antimicrobial Flavonoids as a Potential Substitute for Overcoming Antimicrobial Resistance. **Fitoterapia** 146: 104720. DOI: [10.1016/j.fitote.2020.104720](https://doi.org/10.1016/j.fitote.2020.104720). [Impact factor (IF) = 2.882].
14. Dhiman N, Kaur K, Jaitak V. (2020) Tetrazoles as anticancer agents: A review on synthetic strategies, mechanism of action and SAR studies. **Bioorganic & Medicinal Chemistry** 28: 115599 [Impact factor (IF) = 3.641].
15. Majeed A, Singh A, Sharma RK, Jaitak V., Bhardwaj P. (2020) Comprehensive temporal reprogramming ensures dynamicity of transcriptomic profile for adaptive response in *Taxus contorta*. **Molecular Genetics and Genomics**, 295: 1401-1414 [Impact factor (IF) = 3.291].
16. Thakur A, Kaur K, Sharma P, Singla R, Singh S, Jaitak V. (2020) Synthesis, In-vitro and Docking Analysis of C-3 substituted Coumarin Analogues as Anticancer Agents. **Current Computer-aided Drug Design**, [10.2174/1573409916666200120114641](https://doi.org/10.2174/1573409916666200120114641) [Impact factor (IF) = 1.606]
17. Dandriyal J, Kaur K, Jaitak V. (2020) Synthesis and In-silico Studies of C-4 Substituted Coumarin Analogues as Anticancer Agents. **Current Computer-aided Drug Design**, doi: [10.2174/1573409916666200628104638](https://doi.org/10.2174/1573409916666200628104638) [Impact factor (IF) = 1.606].
18. Sharma A, Biharee A, Kumar A, Jaitak V. (2020) Antimicrobial Terpenoids as a Potential Substitute in Overcoming Antimicrobial Resistance. **Current Drug Targets** 21: 1476-1494 [Impact factor (IF) = 3.465].
19. Sharma R, Jaitak V. (2020) *Asparagus racemosus* (Shatavari) targeting estrogen receptor α : - An *in-vitro* and *in-silico* mechanistic study. **Natural Products Research** 34: 1571-1574 [Impact factor (IF) = 2.861].
20. Pal RP, Jaitak V. (2019) Plant Derived Natural Alkaloids as new Antimicrobial and Adjuvant Agents in Existing Antimicrobial Therapy. **Current Drug Targets** 20 (14): 1409-1433 [Impact factor (IF) = 3.465].
21. Singla R, Singla N, Jaitak V. (2019) *Stevia rebaudiana* targeting α -amylase: An *in-vitro* and *in-silico* mechanistic study. **Natural Product Research** 33: 548-552 [Impact factor (IF) = 2.861].
22. Mittal RP, Rana A, Jaitak V. (2019) Essential Oils: An Impending Substitute of Synthetic Antimicrobial Agents to Overcome Antimicrobial Resistance. **Current Drug Targets** 20: 605-624 [Impact factor (IF) = 3.465].
23. Jasmin, Jaitak V. (2019) A Review on Molecular Mechanism of Flavonoids as Antidiabetic Agents. **Mini-Reviews in Medicinal Chemistry** 19: 762-786 [Impact factor (IF) = 3.862].
24. Kaur K, Jaitak V. (2019) Recent Development in Indole Derivatives as Anticancer Agents for Breast Cancer. **Anti-Cancer Agents in Medicinal Chemistry** 19: 962-982 [Impact factor (IF) = 2.505]

25. Kumar A, Jaitak V. (2019) Natural Products as Multidrug Resistance Modulators in Cancer. **European Journal of Medicinal Chemistry** **176**: 268-291 [*Impact factor (IF) = 6.81*].
26. Choudhary S, Thakur S, Jaitak V, Bhardwaj P. (2019) Gene and metabolite profiling reveals flowering and survival strategies in Himalayan *Rhododendron arboretum*. **Gene** **690**: 1-10 [*Impact factor (IF) = 2.319*].
27. Stappen I, Tabanca N, Ali A, Wanner J, Lal B, Jaitak V, Wedge DE, Kaul VK, Schmidt E, Jirovetz L. (2018) Antifungal and repellent activities of the essential oils from three aromatic herbs from western Himalaya. **Open Chemistry** **16**: 306–316 [*Impact factor (IF) = 1.216*].
28. Panigrahi PP, Singla R, Bansal A, Junior MC, Jaitak V, Yenamalli RM, Singh TR. (2018) In silico Screening and Molecular Interaction Studies of Tetrahydrocannabinol And its Derivatives with Acetylcholine Binding Protein. **Current Chemical Biology** **12**: 181-190 [*Impact factor (IF) = 0.674*].
29. Singla R, Jaitak V. (2018) Recent Advances in Plant Metabolites Analysis, Isolation, and Characterization. Recent Trends and Techniques in Plant Metabolic Engineering, *Ed. S.K.Yadav, V.Yadav, S.P.Singh, Chapter 5, Springer; 1-179, 2018.* [*Impact factor (IF) = 0.674*]
30. Kumar M, Singla R, Dandriyal J, Jaitak V. (2018) Coumarin Derivatives as Anticancer Agents for Lung Cancer Therapy: A Review. **Anticancer Agents in Medicinal Chemistry** **18**: 964-984 [*Impact factor (IF) = 2.505*].
31. Singla R, Gupta KB, Upadhayay S, Dhiman M, Jaitak V. (2018) Design, synthesis and biological evaluation of novel indole-xanthendione hybrids as selective estrogen receptor modulators. **Bioorganic & Medicinal Chemistry** **26**: 266-277 [*Impact factor (IF) = 3.641*].
32. Singla R, Gupta KB, Upadhayay S, Dhiman M, Jaitak V. (2018) Design, Synthesis and Biological Evaluation of Novel Indole-Benzimidazole hybrids Targeting Estrogen Receptor Alpha (ER- α). **European Journal of Medicinal Chemistry** **46**: 206-219 [*Impact factor (IF) = 6.81*].
33. Singla R, Gupta KB, Upadhayay S, Dhiman M, Jaitak V. (2018) Identification of Novel Indole Based Heterocycles as Selective Estrogen Receptor Modulator. **Bioorganic Chemistry** **79**: 72-88 [*Impact factor (IF) = 5.275*]
34. Jasmin, Singla R, Jaitak V. (2018) In Silico Study of flavonoids as DPP-4 and α -glucosidase inhibitors. **Letters in Drug Design & Discovery** **15**: 634-642 [*Impact factor (IF) = 1.15*].
35. Singla R, Jaitak V. (2017) Multitargeted Molecular Docking Study of Natural-Derived Alkaloids on Breast Cancer Pathway Components. **Current Computer-Aided Drug Design** **13**: 294-302 [*Impact factor (IF) = 1.606*]
36. Gupta VK, Kaur R, Singla R, Jaitak V. (2016). Photoprotective, antioxidant screening and new ester from dry root extracts of *Potentilla atrosanguinea* (Himalayan cinquefoil). **South African Journal of Botany** **103**: 49-53 [*Impact factor (IF) = 2.315*]

37. Vishwakarma GS, Gautam N, Babu JN, Mittal S, Jaitak V. (2016) Polymeric Encapsulates of Essential Oils and their Constituents: A Review of Preparation Techniques, Characterization and Sustainable Release Mechanisms. **Polymer Reviews 56:** 668-701 [*Impact factor (IF) = 13.282*]
38. Dandriyal J, Singla R, Kumar M, Jaitak V. (2016). Recent Developments of C-4 substituted Coumarin Derivatives as Anticancer Agents. **European Journal of Medicinal Chemistry 119:** 141-168 [*Impact factor (IF) = 6.81*].
39. Sidhu JS, Singla R, Mayank, Jaitak V. (2016) Indole Derivatives as Anticancer Agents for Breast Cancer Therapy: A Review. **Anticancer Agents in Medicinal Chemistry 16:** 160-173 [*Impact factor (IF) = 2.505*].
40. Mayank, Jaitak V. (2016) Molecular Docking Study of Natural Alkaloids as Multi-targeted Hedgehog Pathway Inhibitors in Cancer Stem Cell Therapy. **Computational Biology and Chemistry 62:** 145-154 [*Impact factor (IF) = 2.877*]
41. Singla R, Jaitak V. (2016) Synthesis of Rebaudioside A from Stevioside and their Interaction Model with hTAS2R4 Bitter Taste Receptor. **Phytochemistry 125:** 106-111 [*Impact factor (IF) = 4.072*].
42. Stappen I, Wanner J, Tabanca N, Wedge DE, Ali A, Kaul VK, Lal B, Jaitak V, Gochev VK, Schmidt E, Jirovetz L. (2015) Chemical Composition and Biological Activity of Essential Oils of *Dracocephalum heterophyllum* Benth. and *Hyssopus officinalis* L. collected wild from Western Himalaya. **Natural Product Communications 10:** 133-138 [*Impact factor (IF) = 0.986*]
43. Mayank, Jaitak V. (2015) Interaction Model of Steviol glycosides from *Stevia rebaudiana* (Bertoni) with Sweet Taste Receptors: A Computational Approach. **Phytochemistry 116:** 12-20 [*Impact factor (IF) = 4.072*]
44. Thakur A, Singla R, Jaitak V. (2015) Coumarins as anticancer agents: A review on synthetic strategies, mechanism of action and SAR studies. **European Journal of Medicinal Chemistry 101:** 476-495 [*Impact factor (IF) = 6.81*].
45. Stappen I, Tabanca N, Ali A, Wedge DE, Wanner J, Kaul VK, Lal B, Jaitak V, Gochev VK, Schmidt E, Jirovetz L. (2015) Chemical Composition and Biological Activity of Essential Oils from Wild Growing Aromatic Plant Species of *Skimmia laureola* and *Juniperus macropoda* from Western Himalaya. **Natural Product Communications 10:** 1071-1074 [*Impact factor (IF) = 0.986*]
46. Stappen I, Ali A, Tabanca N, Khan IA, Wanner J, Gochev VK, Singh V, Lal B, Jaitak V, Kaul VK, Schmidt E, Jirovetz L. (2015) Antimicrobial and Repellent Activity of the Essential Oils of Two Lamiaceae Cultivated in Western Himalaya. **Current Bioactive Compounds [Impact factor 11:** 23-30 (*IF) = 1.309*]

47. Gupta VK, Bhalla Y, Jaitak V. (2014) Impact of ABC transporters, glutathione conjugates in MDR and their modulation by flavonoids: an overview. **Medicinal Chemistry Research 23**: 1-15 [Impact factor (IF) = 1.965]
48. Insan MB, Jaitak V. (2014) New approaches to target Cancer Stem Cells: Current scenario. **Mini-review in Medicinal Chemistry 14**: 20-34 [Impact factor (IF) = 3.862]
49. Singla R, Jaitak V. (2014) Shatavari (*Asparagus racemosus* Wild): A review on its Ethnobotany, Phytochemistry and Pharmacological importance. **International Journal of Pharmaceutical Sciences and Research 5**: 742-757 [Impact factor (IF) = 1.230]
50. Firenzuoli F, Jaitak V, Horvath G, Bassolé IHN, Setzer WN, Gori L. (2014) Essential Oils: New Perspectives in Human Health and Wellness. **Evidence-Based Complementary and Alternative Medicine 2014**: 1-2 [Impact factor (IF) = 1.931]
51. Stappen I, Wanner J, Tabanca N, Wedge DE, Ali A, Khan IA, Kaul VK, Lal B, Jaitak V, Gochev V, Girova T, Stoyanova, Schmidt E, Jirovetz L. (2014) Chemical composition and biological effects of *Artemisia* essential oils from Western Himalaya. **Planta Medica 80**: 1079-1087 [Impact factor (IF) = 3.352].
52. Mayank, Jaitak V. (2014) Drug Targeting Strategies in Breast Cancer Treatment: Recent Updates. **Anticancer Agents in Medicinal Chemistry 4**: 1414-1427 [Impact factor (IF) = 2.505].
53. Monga P, Kaur R, Jaitak V. (2014) In-vitro antimutagenic potential of *Potentilla fulgens*: A Western Himalayan Plant. **Journal of Natural Remedies 14**: 26-34 [Impact factor (IF) = 0.53].
54. Jaitak V, Kaul VK, Das P. (2013) Environmentally benign Michael and Claisen Schmidt reaction of aryl carbonyl compounds by alkali exchange resin. **Indian Journal of Chemistry B 52B**, 1137-1145 [Impact factor (IF) = 0.592]
55. Bhalla Y, Gupta VK, Jaitak V. (2013) Anticancer activity of essential oils: A review. **Journal of the Science of Food and Agriculture 93**, 3643-3653 [Impact factor (IF) = 3.639]
56. Singla R, Kaur R, Arora S, Jaitak V. (2013) In-vitro anti-mutagenic activity of *Asparagus racemosus*- An Ayurvedic medicinal plant. **American Journal of Drug discovery and Development 3**: 286-292 [Impact factor (IF) = 0.108].
57. Saini R, Jaitak V, Guleria S, Kaul VK, Babu GDK, Singh B, Lal B, Singh RD. (2012) Comparison of headspace analysis of hydrodistilled and supercritical fluid extracted oil of *Capillipedium parviflorum*. **Journal of Essential Oil Research 24**: 315-320 [Impact factor (IF) = 1.963]
58. Jaitak V, Bandna, Kaul VK, Das P, Kumar N, Singh B. (2011) One pot multicomponent Michael-Thorpe Ziegler reaction of aryl methyl ketone. **Synthetic Communication 41**: 2727-2737 [Impact factor (IF) = 2.007]
59. Guleria S, Saini R, Jaitak V, Kaul VK, Lal B, Rahi P, Gulati A, Singh B. (2011) Volatile oil composition and antimicrobial activity of the essential oil of *Heracleum thomsonii* (Clarke) from cold desert western Himalaya. **Natural Product Research 25**: 1250-1260 [Impact factor (IF) = 2.861]
60. Guleria S, Jaitak V, Saini R, Kaul VK, Lal B, Kiran Babu GD, Singh B, Singh RD. (2011) Comparative studies of volatile oil composition of *Rhododendron anthopogon* by

- hydrodistillation, supercritical carbon dioxide extraction and head space analysis. **Natural Product Research 25**: 1271-1277 [*Impact factor (IF) = 2.861*]
61. Jaitak V, Kaul K, Kaul VK, Singh V, Singh B. (2011) *Stevia rebaudiana*- a natural substitute for sugar. **Genetic Resources, Chromosome Engineering, and Crop Improvement: Medicinal Plants**: Medicinal Plants, Ed. Ram J. Singh: *University of Illinois, Urbana, USA*; Chapter 26, Vol 6, CRC Press USA; 1-1056, 2011.
 62. Kaul K, Jaitak V, Kaul VK. (2011) Review on pharmaceutical properties and conservation measures of *Potentilla fulgens* Wall. Ex Hook. A medicinal endangered herb of higher Himalaya. **Indian Journal of Natural Products and Resources** [*Impact factor (IF) = 0.11*]
 63. Jaitak V, Sharma K, Kalia K, Kumar N, Singh HP, Singh B, Kaul VK. (2010) Antioxidant activity of *Potentilla flgens*: An alpine plant of western Himalya. **Journal of Food Composition and Analysis 23**: 142-147 [*Impact factor (IF) = 4.556*]
 64. Kurade NP, Jaitak V, Kaul VK, Sharma OP. (2010) Chemical composition and antibacterial activity of essential oil of *Lantana camara*, *Ageratum houstonianum* and *Eupatoronium adenophorum*. **Pharmaceutical Biology 48**: 539-544 [*Impact factor (IF) = 3.503*]
 65. Jaitak V, Kaul VK, Himlata, Kumar N, Singh B, Dhar J, Sharma OP. (2010) New Hopane Triterpenes and antioxidant constituents from *Potentilla fulgens*. **Natural Product Communication 5**: 1561-1566 [*Impact factor (IF) = 0.986*]
 66. Jaitak V, Bandna, Singh B, Kaul VK. (2009) An efficient microwave-assisted extraction process of stevioside and rebaudioside-A from *S.rebaudiana*. **Phytochemical Analysis 20**: 240-245[*Impact factor (IF) = 3.373*]
 67. Jaitak V, Kaul VK, Bandna, Kumar N, Singh B, Laxman. (2009) S. Savergave, V.V.Jogdand, Sanjay Nene. Simple and efficient enzymatic transglycosylation of stevioside by β -cyclodextringlucanotransferase from *Bacillus firmus*. **Biotechnology Letters 31**: 1415-1420 [*Impact factor (IF) = 2.461*]
 68. Bandna, Jaitak V, Singh B, Kaul VK. (2009) Synthesis of novel acetates of caryophyllene under solvent free lewis acid catalysis. **Natural Product Research 23**: 1445-1450 [*Impact factor (IF) = 2.861*]
 69. Jaitak V, Gupta AP, Kaul VK, Ahuja PS. (2008) Validated high-performance thin-layer chromatography method for steviol glycosides in *Stevia rebaudiana*. **Journal of Pharmaceutical and Biomedical Analysis 47**: 790-794 [*Impact factor (IF) = 3.935*]
 70. Jaitak V, Singh B, Kaul VK. (2008) Variability of volatile constituents in *Artemisia maritima* in western Himalaya. **Natural Product Research 22**: 565-568 [*Impact factor (IF) = 2.861*]

Research Grants

Completed

1. Synthesis of Rebaudioside-A: Natural Substitute for sugar from *Stevia rebaudiana* (Bertoni)
Funded by DST Fast track Project- 25.5 lacs
2. Chemical investigation, Antidiabetic and Anticancer study of *Stevia rebaudiana* (Bertoni)
through *invitro* and *insilico* approach
Project Funded by UGC Start- up – 6 lacs
3. Comparative assessment of marine macroalgae Ulva, Gracilaria and Sargassum from
Indian coastal region for anticancer natural products
Funded by Ministry of Earth Sciences (MoES), Government of India (Co-PI) - 40 lacs
4. Studies on Phytoestrogens as anticancer agents from *Asparagus racemosus* (Shatavari)
used in Breast cancer chemotherapy
Research Seed Money, Central University of Punjab, Bathinda (Pb.), India- 3.0 lacs

5. Studies on P-gp (Permeability glycoprotein) inhibition and anticancer potential of *Potentilla fulgens*, *Potentilla atosanguinea* and characterisation of its active constituents
Council for Scientific and Industrial Research (CSIR), India- 29.5 lacs

Ph.D. Students

Completed:

1. Ramit Singla, Design, Synthesis and Evaluation of Indole Based Compounds as Putative Anticancer Agents

Ongoing:

1. Amit Kumar (Research Associate)
2. Kamalpreet Kaur (CSIR NET SRF)
3. Digvijay Singh Yadav (as Co-Supervisor)
4. Alka Rani (as Co-Supervisor)

M.Pharm.

Completed:

1. *In Silico* Studies and Synthesis of Isoxazole Derivatives as Estrogen Receptor-alpha (ER- α) Inhibitors- Girish Chandra Arya (Central University of Punjab Regn No: 19mpharm05)
2. *In Silico* Studies and Synthesis of Oxazole Derivatives as Potent Tubulin Inhibitors- Kulkarni Swanand Sanjay (Central University of Punjab Regn No: 19mpharm08)
3. *In Silico* Studies and Synthesis of Thiazole Derivatives as Potent Tubulin Inhibitors- Sahil (Central University of Punjab Regn No: 19mpharm14)
4. *In Silico* Study of Secondary Metabolites from *Cassia fistula L* against Acetylcholinesterase- Gali Nikki Bhedi (Central University of Punjab Regn No: 19mpharm17)
5. Phytochemical Screening and Molecular Docking Studies of Secondary Metabolites of *Potentilla atosanguinea Lodd* on EGFR and NF-KB and its Role in Lung Cancer- Jereena Mariam Raju (Central University of Punjab Regn No: 19mphyto02)
6. Phytochemical Screening and Molecular Docking Studies of Flavonoids from *Potentilla fulgens* on Nuclear Factor Kappa-B (NF-KB)- Aswin EV (Central University of Punjab Regn No: 19mphyto05)
7. Phytochemical Screening and Molecular Docking Studies of *Stevia rebaudiana* Targeting Alpha-amylase and Alpha-glucosidase- Neha Sagar (Central University of Punjab Regn No: 19mphyto06)
8. Phytochemical Screening and Molecular Docking Studies of Secondary Metabolites from *Asparagus racemosus* Targeting Estrogen Receptor-alpha and Aromatase- Srishti Goyal (Central University of Punjab Regn No: 19mphyto14)
9. Synthesis and In silico study of Indole based Tetrazole derivatives as Putative Anticancer Agents-Neha Dhiman (Central University of Punjab Regn No: 18mpharm12).
10. Synthesis and Molecular Docking Study of Indole Based Compounds as Anticancer agents- Neha Devi (Central University of Punjab Regn No: 18mpharm05).
11. Extraction and Antimicrobial Activity of *Potentilla fulgens* Roots from Western Himalayas- Awadh Biharee (Central University of Punjab Regn No: 18mpharm08).
12. Extraction, Phytochemical screening and *in vitro* antibacterial activity of *Potentilla atosanguinea* roots- Aditi Sharma (Central University of Punjab Regn No: 18mphyto15).

13. Extraction and Phytochemical Investigation of Secondary Metabolites from *Asparagus racemosus* roots- Ankur Kumar (Central University of Punjab Regn No: 18mphyto05).
14. Extraction, Isolation and In-silico Study of Steviol glycosides of *Stevia rebaudiana* Bertoni- Tamanna Poswal (Central University of Punjab Regn No: 18mphyto14).
15. Antioxidant and Photoprotective Activities of *Potentilla fulgens* roots from Western Himalayas- Gandhi Sony Pears (Central University of Punjab Regn No: 17mpharm 17).
16. Comparative Study of Photoprotective and Antioxidant Activities of Different *Potentilla atrosanguinea* Root Extracts by Different Extraction Techniques- Ankit Kumar (Central University of Punjab Regn No: 17mpharm 11).
17. Effect of Different Extraction Techniques on Content of Stevioside and Rebaudioside A in *Stevia rebaudiana*- Sahil Verma Central University of Punjab Regn No: 17mphyto 03).
18. *In-vitro and In-silico* study of fruit part of *Calotropis procera* for antibacterial activity- Sonakshi Chaudhary(Central University of Punjab Regn No: 17mphyto05).
19. Antiproliferative activity of *Asparagus racemosus* extracts- Mr. Ram Sharma (Central University of Punjab Regn No: 16mpharm02).
20. Phytochemical investigation and anti-proliferative potential of dormant and germinated seed extract from *Cucurbita pepo* (Pumpkin)- Mr. Souvik Mukherjee (Central University of Punjab Regn No: 16mphyto01).
21. Chemical investigation and anti-proliferative screening of extracts from *Stevia rebaudiana* (Bertoni)- Ms Aditi Saxena (Central University of Punjab Regn No: 16mphyto03).
22. In vitro and Insilico study of secondary metabolites from *Calotropis procera*- Mr Partha Pratim Das (Central University of Punjab Regn No: 16mphyto05).
23. Phytochemical investigation and anti-proliferative activity of *Nigella sativa* Linn Seeds- Mr. Saptarshi Samajdar (Central University of Punjab Regn No: 16mphyto02).
24. Synthesis and In Silico Screening of Indole based 1, 4-Dihydropyridine Derivatives as Anticancer Agents- Mr. Kunal Prakash (Central University of Punjab Regn No: 15mpharm01).
25. Synthesis and In-silico screening of C-3 Substituted Coumarin Derivatives as α -amylase Inhibitors- Mr. Ashish Sharma (Central University of Punjab Regn No: 15mpharm08).
26. Design, Synthesis and In-silico Screening of C-4 Substituted Coumarin Derivatives as Putative Anti-proliferative Agents for Breast Cancer” - Miss Jyoti Dandriyal (Central University of Punjab Regn No: CUPB/M.Pharm-MC/SBAS/CPS/2014-15/05).
27. Design, Synthesis and Screening of C-3 Substituted Coumarin Derivatives as Putative Anti-proliferative Agents for Lung Cancer” – Mr. Manvendera Kumar (Central University of Punjab Regn No: CUPB/M.Pharm-MC/SBAS/CPS/2014-15/02).
28. Design and Synthesis of Indole derivatives as Putative Anti-proliferative Agents - Mr. Jagpreet Singh (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2013-14/03).
29. Invitro and Insilico Study of Phytoestrogens from *Asparagus racemosus* in breast cancer therapy - Miss Shivani Sharma (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2013-14/04).
30. Design and Synthesis of Coumarin Derivatives as Putative Anti-proliferative Agents” - Miss Anuradha Thakur (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2013-14/09).
31. Phytochemical investigation of natural sweetener from *Stevia rebaudiana* - Mr. Mayank (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2012-13/03).
32. Anticancer activity of *Cassia fistula* linn. through Invitro and insilico approach- Miss Akanksha Sharma (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2012-13/09).

33. In-Vitro Bio-Assay Guided Fractionation of Crude Root Extracts of *Potentilla atosanguinea* Lodd. and In-Silico Study of Polyphenolic Compounds with MDR receptors in Cancer Chemotherapy” Mr. Vinay Kumar Gupta (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2011-12/07).
34. Integrated in-vitro antioxidant and in-silico anti-apoptotic study of *Aconitum heterophyllum* Wall - Ms. Yashika Bhalla (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2011-12/09).
35. Phytochemical Investigation and Biological evaluation of secondary metabolites from *Asparagus racemosus* through in-vitro and in-silico approach”- Ramit Singla (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2011-12/03).
36. Phytochemical investigation, in vitro anti-mutagenic activity of *Potentilla fulgens* Lodd. and in-silico study of flavonoids with CDK-2, CDK-6 receptors” - Miss Prakriti Monga (Central University of Punjab Regn No: CUPB/M.PHARM-MC/SBAS/CPS/2011-12/08).

Ongoing: 7 Students

M.Sc. thesis supervised

1. *In Silico* Study of Thiazolidine-2,4-diones for Their Anti-Diabetic Properties- Saba Tabassum (Central University of Punjab Regn No:19mscchs11).
2. *In-Silico* Based Study of Terpenoids against Mosquito Acetylcholinesterase Enzyme- Manikanta Maddirala (Central University of Punjab Regn No:19mscchs12).
3. *In Silico* Study of Indole Derivatives as FtsZ and Dihydrofolate Reductase Inhibitors- Sonali Goyal (Central University of Punjab Regn No:19mscchs13).
4. Molecular modelling study of terpenoids on MenB enzyme as Antimicrobial agent- Rahul Verma (Central University of Punjab Regn No:18mscchs 16).
5. Synthesis and In-silico study of Indole derivatives as Aromatase Inhibitor- Vinay Kumar (Central University of Punjab Regn No:17mscchs 03).
6. Synthesis and In-Silico Study of C-3 Substituted Coumarin Derivatives as α -Amylase Inhibitors- Mannat Rani (Central University of Punjab Regn No:17mscchs 13).
7. In Silico study of flavonoids as ABC Transporter (P-gp, BCRP and MRP1) Inhibitors in Cancer Chemotherapy. Miss Anupama Sharma (Central University of Punjab Regn No:16mscchs 03).
8. In Vitro and In Silico study of essential oil components from *Eucalyptus tereticornis* as antibacterial agents. Miss Avantika Bhardwaj (Central University of Punjab Regn No:16mscchs 4).
9. In silico Study of Essential Oil constituents from *Eucalyptus tereticornis* against HPPK, DHPS and DHFR bacterial enzymes- Mr. Abhilash Rana (Central University of Punjab Regn No: 15mscchs 05).
10. In Vitro and In Silico Anticancer Studies of Secondary Metabolites from *Pleurotus ostreatus*. Miss Jyoti Yadav (Central University of Punjab Regn No:15mscchs 4).
11. In Silico Study of Steviol Glycosides from *Stevia rebaudiana* (Bertoni) on Taste Receptors– Miss Poonam Salaria (Central University of Punjab Regn No:15mscchs 12).
12. In Silico Study of Flavonoids as Estrone Sulfatase and 17β -Hydroxysteroid Dehydrogenase Inhibitors in Breast Cancer– Miss Navdeep Kaur (Central University of Punjab Regn No: CUPB/MSc/SBAS/CPS/2014-15/07).
13. In-vitro and in-silico study of secondary metabolites from *Stevia rebaudiana* (Bertoni) as anti-diabetic agents– Mr. Navdeep Singla (Central University of Punjab Regn No: CUPB/MSc/SBAS/CPS/2014-15/02).

14. In silico Study of Flavonoids as α -amylase and α -glucosidase Inhibitors– Mr. Virender Singh (Central University of Punjab Regn No: CUPB/MSc/SBAS/CPS/2014-15/08).
15. Chemical composition and anti-bacterial evaluation of essential oils from *Azadirachta indica*– Miss Rajinder Pal Mittal (Central University of Punjab Regn No: CUPB/MSc/SBAS/CPS/2013-14/02).
16. In silico study of flavonoids for anti-breast cancer potential– Miss Khushboo (Central University of Punjab Regn No: CUPB/MSc/SBAS/CPS/2013-14/04).
17. Molecular modelling study of flavonoids for their anti-diabetic properties– Miss Jasmin (Central University of Punjab Regn No: CUPB/MSc/SBAS/CPS/2013-14/08).

Conferences/Symposiums/Workshops

Organized

1. Two Day Workshop and Hand-on Training on “High-Performance Thin Layer Chromatography (HPTLC)” organised at Central University of Punjab on December 5-6, 2019.
2. Two Day Workshop on “Advanced Computer-Aided Drug Design and Computational Biology” organized by the Central University of Punjab, Bathinda on December 18-19, 2019.
3. Three day workshop on “ Advanced Workshop on Molecular Docking, Virtual Screening and Computational Biology” organized by the Central University of Punjab, Bathinda on November 15-17, 2017.
4. Two Day Workshop on “Drug Design, Molecular Docking, Virtual Screening and Pharmacoinformatics” organised at Central University of Punjab on November 26-28, 2015.

Attended

1. Kamalpreet Kaur, **Vikas Jaitak**, International Conference on “Chemical Constellation Cheminar-2019 (C³-2019)”, organized by Department of Chemistry, Dr B R Ambedkar National Institute of Technology Jalandhar on October 12-13, 2019.
2. **Invited Lecture: Vikas Jaitak**, Synthesis of Natural Sweeteners and their interaction model with taste receptors: International Conference on Metabolomics-ICOM 2018, Bangkok Thailand on dated February 26-28, 2018.
3. Amit Kumar, **Vikas Jaitak**, Natural Products as Multidrug resistance modulators: 6th Biennial International Conference on New Developments in Drug Discovery from Natural Products and Traditional Medicines, NIPER, Mohali on dated Nov 15-17, 2018
4. **Invited Lecture: Vikas Jaitak**, Synthesis of Rebaudioside A from Stevioside and their Interaction Model with hTAS2R4 Bitter Taste Receptor. 9th Symposium of the European Stevia Association (EUSTAS), Gothenburg, Sweden on dated September 15-16, 2016.
5. Ramit Singla, **Vikas Jaitak**, Exploration of Molecular Interaction of Steviol Glycosides from *Stevia rebaudiana* (Bertoni) with Sweet Taste Receptors: A Computational Approach. 9th Symposium of the European Stevia Association (EUSTAS), Gothenburg, Sweden on dated September 15-16, 2016.
6. Anuradha Thakur, **Vikas Jaitak**, Coumarins: An emerging invaluable agent with potential anticancer property. One day symposium on Recent Trends in Molecular Medicine, Dec 5, 2015, Central University of Punjab, Bathinda

7. Ramit Singla, **Vikas Jaitak**, Phytoestrogens from *Asparagus racemosus* targeting breast cancer pathway components. ISBOC-10 an IUPAC's International Symposium on Bio-Organic Chemistry. January 11-15, 2015, Indian Institute of Science Education and Research, Pune, India.
8. **Invited Lecture: Vikas Jaitak**, *Stevia rebaudiana*: Natural substitute for sugar. The Biennial International Conference on Drug Discovery from Natural Products and Traditional Medicines (DDNPTM-2014), 20 - 22 November 2014, NIPER Mohali
9. Anuradha Thakur, **Vikas Jaitak**, Coumarins: An emerging invaluable agent with potential anticancer property. One day symposium on Recent Trends in Molecular Medicine, Dec 5, 2015, Central University of Punjab, Bathinda
10. Ramit Singla, **Vikas Jaitak**, *Asparagus racemosus* Wild: An Emerging Plant of Enormous Medicinal and Phytochemical Importance. One day symposium on Recent Trends in Molecular Medicine, Dec 5, 2014, Central University of Punjab, Bathinda.
11. Mayank, Akanksha Sharma, **Vikas Jaitak**. Multi-targeted Breast Cancer chemotherapy- Answer to Existing problems. 50th Annual Convension of chemists, Golden Jubilee Celebrations of Indian Chemical Society, at Panjab University Chandigarh, December 04-07, 2013.
12. **Vikas Jaitak**. National seminar on Enviornment and Health. Central University of Punjab Bathinda, 27th Sept 2011.
13. V.K.Kaul, **Vikas Jaitak**, G.D.Kiran Babu, K.Kaul, B. Singh & P.S.Ahuja. *Stevia rebaudiana* – Current status & future prospects. International symposium on current status and oppurtunities in aromatic and medicinal plants. CIMAP, Lucknow, Feb 21-24, 2010.
14. V.K.Kaul, **Vikas Jaitak**, G.D. Kiran Babu. *Stevia rebaudiana*-A wonder plant for diabetes. Symposium on natural products in health & disease. Biochemical and Molecular mechanisms. PU Chandigarh, March 5-6, 2010.
15. **Vikas Jaitak**, V.K.Kaul, GD Kiran Babu, Bikram Singh & PS Ahuja. Symposium on prospects of stevia. Institute of Himalyan Bioresource Technology (CSIR), Palampur (HP), Sept 24-25, 2010.
16. **Vikas Jaitak**, Kiran Kaul, V.K.Kaul, GD Kiran Babu, Bikram Singh & PS Ahuja. *Stevia rebaudiana*-A natural sweetener for diabetes. International conference on new developments in drug discovery from natural products and traditional medicines. NIPER, Mohali, 20-24 Nov. 2010.
17. **Vikas Jaitak**. International conference on “NMR at the interface of Physics Chemistry and Biology” IISER Mohali, 29-30 Nov. 2010.
18. **Vikas Jaitak**, Bandna, Bikram Singh, V.K.Kaul “An efficient microwave Assisted extraction of stevioside and rebaudioside-A from *S.renaudiana*. Poster presentation organised by ISAS, IHBT, Palampur ,November 23-25 (2008)
19. **Vikas Jaitak**, V.K. Kaul, Bikram Singh “Enzymatic biotransformation for upgradation of stevioside (Poster # P-5) Bio, Nano, Geo Sciences, addressing issues of concern to mankind. Sponsored by Humbold Academy Chandigarh and Kanpur and held at IHBT Palampur (HP) March 24-26 (2006)
20. **Vikas Jaitak**. Society of Biopesticide Sciences, IPRC, Jalandhar, India, Nov 11-13, 2005.

1. **Vikas Jaitak**, AICTE Training And Learning (ATAL) Academy Online Elementary FDP on " Molecular Manufacturing" from 03rd January 2022 to 07th January 2022 at Central University of Punjab, Bathinda
2. **Vikas Jaitak**, AICTE Training And Learning (ATAL) Academy Online Elementary FDP on " Leading Self to Excellence" from 15 October 2021 to 19 October 2021 at Indraprastha Institute of Information Technology, Delhi
3. **Vikas Jaitak**, One-week national Interdisciplinary Online Workshop on “Climate Change and Environmental Sustainability” from 22 March 2021 to 26 March 2021 at Central University of Punjab, Bathinda
4. **Vikas Jaitak**, AICTE Training And Learning (ATAL) Academy Online FDP on "Artificial Intelligence" at NIPER Kolkata from 7-11 Dec 2020
5. **Vikas Jaitak**, AICTE Training And Learning (ATAL) Academy Online FDP on "Molecular Manufacturing" at Central University of Punjab from 23-27 Nov 2020
6. **Vikas Jaitak**, Innovation Ambassdor Training Programme, IIC, MHRD at LPU Phagwara, 16-17 Jan 2020.
7. **Vikas Jaitak**, One week National Interdisciplinary workshop on “Recent Advances in Environmental Studies” at Central University of Punjab, Bathinda from March 25 to March 29, 2019
8. **Vikas Jaitak**, Science Academies refresher course on Plant Taxonomy, Phytogeography and Ecology held at Central University of Punjab from March 05, 2019 to March 19, 2019.
9. **Vikas Jaitak**, Refresher programme sponsored by UGC attended at Punjabi University of Patiala dated June 20- July 11, 2016
10. **Vikas Jaitak**, Orientation Programme sponsored by UGC attended at Punjabi University of Patiala dated June 15- July 11, 2015

Webinar Organised

1. Start-up Ecosystem and Role of Universities, Prof. G.L.Puntambekar, Nov 05, 2020
2. Workshop on Intellectual Property Rights (IPRs) and its effective management for start-up, April 28, 2021

E-Sessions Attended

1. **Vikas Jaitak**, E-Session on National Innovation and Startup Policy (NISP) for students and faculty in HEIs, with Dipan Sahu National Coordinator - NISP, ARIIA, IIC, MBA in IEV Program MHRD’s Innovation Cell, AICTE, New Delhi, dated April 21, 2020.
2. **Vikas Jaitak**, Leadership talk with Prof DP Singh, Chairman UGC, MHRD Innovation cell, dated May 09, 2020.
3. **Vikas Jaitak**, Leadership talk with Dr Pramod Chaudhary, Founder, Chairman, Praj Industries Limited and Dr Abhay Jere, Chief Inoovation Officer, IIC, MHRD, dated May 16, 2020.
4. **Vikas Jaitak**, IIC Online Sessions conducted by Institution's Innovation Council (IIC) of MHRD's Innovation Cell, New Delhi to promote Innovation, IPR, Entrepreneurship, and Start-ups among HEIs from 28th April to 22nd May 2020 during COVID-19 nationwide lockdown

5. **Vikas Jaitak**, AISNP Webinar lecture series on Why Antimicrobial Stewardship held on June 16, 2020 by Amity International Society of Natural Products, Health & Allied Sciences, Amity University

Research Collaboration

1. Prof. Monisha Dhiman, HOD, Department of Microbiology, Central University of Punjab
2. Dr. Shashank Kumar, Assistant Professor, Department of Biochemistry, Central University of Punjab
3. Dr. Pankaj Bhardwaj, Assistant Professor, Department of Botany, Central University of Punjab
4. Dr. Felix Bast, Professor, Department of Botany, Central University of Punjab
5. Dr. V.K.Kaul, Former HOD, Natural Plant Products Division, IHBT, Palampur (H.P.), India
6. Prof. Saroj Arora, Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar, Punjab, India.