

## BIOGRAPHICAL SKETCH

**Name** Dr. Saba Irshad (Young Scientist/PDF Fellow)  
**Date of Birth** 7 Aug 1982  
**Gender** Female  
**Contact Detail** +91-9794361106  
[786.saba@gmail.com](mailto:786.saba@gmail.com)  
**Postal Address** 602/103N, Adnan palli Colony, west begariya  
Dubagga Lucknow.-227107  
India  
**Father name** Irshad Ahmad Siddiqi  
**Mother name** Zahida Bano

### Educational Qualification

DEGREE	INSTITUTION	DIV.	%AGE	YERAS	FIELD OF STUDY
PH.D.*	UNIVERSITY OF LUCKNOW	First	-----	2016	BOTANY
M.SC.	UNIVERSITY OF LUCKNOW	First	67.1%	2004	BOTANY
B.SC.	UNIVERSITY OF LUCKNOW	First	70.5%	2002	BOTANY, CHEMISTRY
INTERMEDIATE	UTTAR PRADESH BOARD	First	71.2%	1999	BIOLOGY, PHYSICS, CHEMISTRY
HIGH SCHOOL	UTTAR PRADESH BOARD	First	67.1%	1997	BIOLOGY, SCIENCE, MATHS

\* PhD Topic- **Botanical, Chemical and Molecular Characterization of a Controversial Drug 'Shankpushpi' and evaluation of its antioxidant potential.**

- **MBA in Total Quality Management** from Sikkim Manipal University, Sikkim in the year 2013 with **grade-A** (excellent).
- **Post Graduate Diploma in Intellectual Property Right** from Indra Gandhi Open University, New Delhi, India. 2016 with **First Division (71.0%)**.

### Personal Statement

To obtain a responsible and challenging position (Post Doctrate /Research Associate/ Staff Scientist/Acadamic positions) where my education and work experience will have valuable applications.

### Professional experiences/Employment

S.No.	Time Period	Position	Division/Organization
1	March 2018- Sept. 2021	Young Scientist Fellow	Pharmacognosy Division, CSIR-National Botanical Research Institute, Lucknow, India
2	Oct. 2016-2 <sup>nd</sup> March 2017	Women Scientist	Phytoinformatics, CSIR-Unit for Research and Development of Information products, Pune, India.
3	April 2012-Oct. 2015	Senior Research fellow	Pharmacognosy and Ethnopharmacology division-National Botanical Research Institute (NBRI), Lucknow, India.
4	Oct. 2011-March. 2012	Senior Research fellow	Crop protection division – Indian Institute of sugarcane Research (IISR), Lucknow, India.
5	Feb. 2007-Dec. 2008	Project Assistant II	Pharmacognosy and Ethanopharmacology Division (NBRI) in collaboration with Herbal Research Section (ITRC), Lucknow, India.
6	June. 2005- June. 2006	Project Assistant II	Division of Botany and Pharmacognosy, Central Institute of Medicinal and Aromatic plants (CIMAP)-Lucknow, India.

### **Professional Achievements**

In more than 10 year of research experience I have done projects of different National and state level funding agencies viz. CSIR, ICAR, ICMR, DST and UP, CST. During this period I have learned **Macro and microscopical studies, computer aided photography, software based measurement of anatomical structures, Physicochemical, phytochemical parameters, Spectrophotometric quantification of phytochemical, HPTLC based densitometric profiling and quantification of phytochemicals, In vitro antioxidant potential techniques, RAPD and ISSR based molecular characterization.** I have done work on Discovery, Development, Documentation and Commercialization of New Bioactive and Traditional Preparations, **Molecular characterization** of Important Ayurvedic Drug ‘**Dashmoola**’ as well as diseased and healthy leaf of **Sugarcane** its pathogen *Colletotrichum falcatum* population and different isolates of *Trichoderma* the biological control agent of Red rot of Sugar cane. I have done **quality control**

**and standardization work** of Important Ayurvedic Drug ‘**Shankhpushpi**’ in PhD. I have published 17 National and International research papers, 3 Book chapters and 5 popular articles, 19 paper present in National and International Conference/Seminar/Symposium, attended 6 training programme/workshops. In addition I have given training to the villagers’ of important medicinal plants through pamphlets and posters.

### **Fellowship Award**

**UP, CST, Young Scientist Fellowship, March 2018, Project title** “Evaluation of seasonal effect on antihypertensive indole alkaloid of *Rauwolfia* sp. from Northern India and development and validation of physicochemical and molecular markers”.

**ICMR-SRF dated March 2012, Project title** “Chemical and Molecular Characterization of an important Medhya Rasayana Drug ShankhPushpi and Authentication of its commercial samples”.

### **Membership**

- Member of The Indian Botanical Society (IBS)
- Member of Society for Ethnopharmacology of India (SFE-India): Membership No. SFE/14/I-319

### **Proficiency in computer application**

- Certificate course in MS. Office
- Certificate course in Internet awareness programme

### **List of paper published**

1. Sayyada Khatoon, **Saba Irshad**, A validated high-performance thin-layer chromatography method for the determination of two bioactive lignans, phyllanthin and hypophyllanthin, in the seasonal variation study of *Phyllanthus amarus*, *Journal of Planar Chromatography – Modern TLC*. 2021, 34, 427–435. (IF-0.856) (**National PD Sethi Best Paper Award 2021**)
2. **Saba Irshad**, Sayyada Khatoon, Macro-microscopical, Physico-phytochemical and HPTLC based Diagnostics of an Antihypertensive Drug ‘*Sarpgandha*’ resolving Adulterant/substitute, *Journal of Ayurveda*. 2021; 15, 280-86. (UGC care list)
3. **Saba Irshad**, Sayyada Khatoon, A validated HPTLC method for the simultaneous determination of seasonal alterations of two antihypertensive monoterpene indole alkaloids in *Rauwolfia* species from northern India, *South African Journal of Botany*. 2021; 142, 193-200. (IF-2.315)

4. **Saba Irshad**, Niraj Singh, Sayyada Khatoon and TS Rana, Quantification of *Shankhpushpi* using Phytochemical and Molecular markers, International Journal of Pharmacognosy and Phytochemical Research. 2020;12(1):52-59. (IF-1.279)
5. Sayyada Khatoon, **Saba Irshad**, Madan Mohan Pandey, Subha Rastogi and Ajay Kumar Singh Rawat, 2019, A validated HPTLC densitometric method for determination of lupeol,  $\beta$ -sitosterol and rotenone in *Tephrosia purpurea*: A seasonal study. Journal of chromatographic Science, 57 (8): 688-96. (IF-1.216)
6. Sayyada Khatoon, **Saba Irshad**, Vijyakumar M, Namrta Choudhry, MB Siddiqui and Nikhil Kumar, 2018, Pharmacognostical Analysis of *Tinospora cordifolia* (Thunb.) Miers, with respect to dioecy. Single Cell Biology, 7:4: 1-10. (IF- 1.0)
7. **Saba Irshad**, Sayyada Khatoon, 2018, Development of validated HPTLC method for simultaneous estimation of caffeic acid, ferulic acid,  $\beta$ -sitosterol and lupeol in *Convolvulus pluricaulis* Choisy. and its adulterants/substitutes, Journal of Planer Chromatography, 31(6): 429-436. (IF-0.459)
8. Abhishek Gupta, Jyotsana Dwivedi, **Saba Irshad**, Shikhar Verma, Siddharth Pragyadeep, Harinath Dwivedi, and AKS Rawat. 2018, Comparative Pharmacognostical Evaluation And HPTLC Analysis Of Three Different Species Of *Bauhinia* Leaves, Research Journal of Pharmaceutical, Biological and Chemical Sciences, 9(5), 347-356. (IF-0.35)
9. Neha Sahu, **Saba Irshad**, Sayyada Khatoon, KR Arya, 2017, Macro-microscopic and LCMS markers for identification and authentication of herbal formulations of *Taxacum officinale* and *Launaea procumbens*, International Journal of Research in Pharmaceutical Sciences. 8(3): 304-313.
10. Chetan Sharma, **Saba Irshad**, Sayada Khatoon and KR Arya. 2017, Pharmacognostical evaluation of Indian folk traditional plant *Coelogyne cristata* and *Pholidota articulata* used for healing fracture. Ind J Exp Biol. 55: 622-627. (IF-0.934)
11. Anupam Bisht, **Saba Irshad**, A. K. S. Rawat and Harinath Dwivedi, 2017, Pharmacognostical studies on *Saraca asoca* (Roxb.) Willd. flower, Tropical Plant Research, 4(1): 153–160.
12. Veena Dixit, **Saba Irshad**, Harsh Singh, Priyanka Agnihotri, Tariq Husain, and Sayyada Khatoon, 2017, High Performance Thin layer Chromatographic determination of three therapeutic phenolic component in *Lucas* species, *Journal of Planer chromatography*, 30 (1), 25-31. (IF-0.611) (**PD Sethi Awarded**)
13. **Saba Irshad**, PK Misra, Ajay Kumar Singh Rawat & Sayyada Khatoon, 2016, Authentication of commercial samples of *Shankhpushpi* through physico-phytochemical analysis and TLC fingerprinting. *Indian Journal of Traditional Knowledge*, 15 (4), 646-653. (IF-1.273)
14. **Saba Irshad**, Siddhartha Pragyadeep, Ajay Kumar Singh Rawat, PK Misra & Sayyada Khatoon, 2015, Comparative pharmacognostical studies of two medicinally important

Indian *Evolvulus* species. *Indian Journal of Traditional Knowledge*, 14(4), 564-570. (IF-1.273)

15. Sayyada Khatoon, **Saba Irshad**, AKS Rawat and PK Misra, 2015, Comparative Pharmacognostical Studies of Blue and White Flower Varieties of *Clitoria ternatea* L. *J Pharmacogn Nat Prod*, 1:1 109. doi:10.4172/jpnp.1000109
16. Veena Dixit, **Saba Irshad**, Priyanka Agnihotri, AK Paliwal, Tariq Husain, 2015, Evaluation of Antioxidant and Antimicrobial potential of *Lucas urticaefolia* (Lamiaceae). *J Applied Pharmaceutical Sciences*, 5, pp. 39-45.
17. **Saba Irshad**, Jyotsna Singh, Poonam Kakkar and Shanta Mehrotra, 2009 Molecular characterization of three *Desodium* spp.- An important ingredient of Dashmoola by RAPD. *Fitoterapia* 80 pp.115-118. (IF-2.4)
18. **Saba Irshad**, J Singh., SP Jain and SPS Khanuja; *Curculigo orchioides* (*Kali Musali*): An Endangered medicinal plant of commercial value; 2006, *Natural product radiance*, 5 (5) pp. 369-372
19. J Singh., A.K. Singh, NP Mishra, Kirti Sinha and **Saba Irshad**, 2004 Therapeutics, bioavailability and pharmacokinetics of certain important aromatic herbs and essential oils, *NIM MAP*, pp.14-23
20. J Singh., Mishra N.P., **Irshad Saba**, Jain S.P., Singh S.C., Sharma Ashok and Khanuja S.P.S., 2005, Traditional uses of *Gloriosa superba* (Kalihari), *Journal of Medicinal & Aromatic Plants*, 27 pp. 535-538.
21. Singh J, NP Mishra, **Saba Irshad**, SP Jain, SC Singh, Ashok Sharma and SPS Khanuja, 2005. Traditional Uses of *Taxus baccata*, (Talispatra) *Journal of Medicinal & Aromatic Plants*.

### **Papers communicated**

1. Rayees Ahmad Mir, **Saba Irshad**, Sayyada Khatoon, R. M. Agarwal Simultaneous Quantification of Polyphenolic Compounds in two Cultivars of Marigold (*Tagetes erecta* L.) using High-Performance Thin-Layer Chromatography, Phytochemistry.

### **Chapter in Book**

1. Sayyada Khatoon and **Saba Irshad**, *Bark Drugs as Indian ethnomedicine, modern therapeutics and future prospects*. Edt. AK Jain, In: Emerging Dimensions in Indian Ethnobotany (Dr S.K. Jain's Felicitation Volume), Chapter-8, pp.1-10 Scientific Publishers. 5A New Pali Road, PO Box 91, Jodhpur 342 001, India. 2015.

2. Sayyada Khatoon and **Saba Irshad**, Alzheimer's and age related Dementias: Ethnomedicine, Modern researches and future prospects, In *Ethnomedicinal Plants to cure human disease*, Chapter-2, pp.41-68, Eastern Book House Publishers (INDIA), Guwahti. 2017
3. **Saba Irshad** and Sayyada Khatoon, *Convolvulus pluricaulis*- a herb for Hypertension related to Mental stress, In *Recent Progress in Medicinal Plants, Metabolic Disorders Hypertension*, (2 Vol. 48), Chapter-9, pp.149-168, Studium press LLC, New Delhi India. 2018

### Popular Articles

1. **Saba Irshad**, Sayyada Khatoon, 2019. Aparajita (*Clitoria ternatea* L.) k neele aur safed phoolon ki kismon ka tulnatmak Bhashajeeye Adhyayan, *Vigyan Vani*, ---
2. **Saba Irshad**, AKS Rawat, Sayyada Khatoon, 2014. *Convolvulus pluricaulis* (Shankhpushpi) : Mastishk k liye vardan aushadhiye padap ka vanaspatik aur bhautic rasainik vivran, *Vigyan Vani*, 20 pp. 47-50.
3. J Singh., **Saba Irshad**, N.P Mishra. and S.C. Singh., 2006. Shankhpushpi: The true identity, (In Hindi) *Maps dew* 2 (1) pp. 1-5
4. J Singh, NP Mishra, **Saba Irshad** and SC Singh 2006, Manohari Aushdhiya Briksh (Hindi), *Pushpa Malika*, pp.6-8.
5. Singh J, Mishra N.P., **Irshad Saba**, Singh S.C. and Jain SP. Safed Musali: 2006, The true identity, *Aus Bund*. 2 (2) pp. 1-6

### Abstract published in Seminar/Symposium

1. **Saba Irshad** and Sayyada Khatoon, Comparative Pharmacognostical Evaluation of the Root of an Antihypertensive Plant *Rauwolfia serpentina* and its Possible Substitute/Adulterant *R. tetraphylla* In "43 All India Botanical Conference of the Indian Botanical Society on Sustainable Development of Plant Resources and Conservation of Threatened Plants in Botanical Gardens, during 19-21, March, 2021, at CSIR, NBRI, Lucknow.
2. **Saba Irshad** and Sayyada Khatoon, Quality Control of 'Sargandha' Used in Hypertension In "7<sup>th</sup> International Congress of the Society for Ethnopharmacology, India (SFEC 2020)" during February 15-17, 2020" at Jamia Hamdard, New Delhi, PP-113.
3. **Saba Irshad** and Sayyada Khatoon, Cultivation of *Rauwolfia* Quality Raw Material: State of the Art and Future Approach, In "Role of Intellectual Property Protection in Industry and Device Development: A Context Towards Quality Products" at PSIT Kanpur on 8 Sept. 2019, .

4. **Saba Irshad** and Sayyada Khatoon, Aparajita (*Clitoria ternatea* L.) k neele aur safed phoolon ki kismon ka tulnatmak Bhashajeeye Adhyayan, In Summer Plant Science Fest-2019 at CSIR-NBRI, Lucknow during 11-13 April 2019, p-90. (**Oral Presentation in Hindi**)
5. **Saba Irshad** and Sayyada Khatoon, Macro-Microscopical Evaluation of Three Botanical Source of 'Shankhpushpi'. In International Conference on New age opportunities and challenges for quality safety and GMP in herbal drug Development. At CSIR-NBRI during 22-23 Feb. 2019. (**poster presentation**)
6. **Saba Irshad**, Neraj Singh, Sayyada Khatoon and TS Rana, Quantification of Phytochemical and Molecular Markers of Shankhpushpi its Adulterants/Substitutes. In International Conference" on "Future Diagnostic, Therapeutic and Theranostics Modalities" at Interdisciplinary Biotechnology Unit, Aligarh Muslim University, Aligarh, during December 29-31 2018. (**Oral presentation**).
7. **Saba Irshad** and Sayyada Khatoon, Validation of traditional claims of Indian *Evolvulus* species through in-vitro antiradical activities and estimation of neuroprotective hydroxycinnamic acids using HPTLC. In **3 rd World Congress on "Pharmaceutics and Drug Discovery" at Dubai** during 15th-16th, December 2017. (**oral presentation**)
8. **Saba Irshad**, PK Misra, AKS Rawat and Sayyada Khatoon, Comparative Pharmacognostical studies of blue and white flower varieties of *Clitoria ternatea* L. In National Seminar on "Quality, Safety & Efficacy of Ayurvedic Drugs" at Deendayal Research Institute, Arogyadham, Chitrakoot, Sponsored by Department of AYUSH, India, on 23-24 May 2015.
9. **Saba Irshad**, Siddhartha Pragyadeep, Ajay Kumar Singh Rawat, PK Misra and Sayyada Khatoon, Quality evaluation and validation of traditional claims of Indian *Evolvulus* species with respect to phenolic content caffeic acid and antioxidant potential, In 5<sup>th</sup> International conference on Plants and environmental pollution (ICPEP-5), organized by International Society of Environmental Botanists, 24-27 Feb. 2015 at CSIR-NBRI, Lucknow.
10. Sayyada Khatoon, MM Pandey, Subha Rastogi, **Saba Irshad** and AKS Rawat, Effect of Seasonal environment on microscopy and chemical constituents of *Tephrosia perpuria* (L.) Pers. In 5<sup>th</sup> International conference on Plants and environmental pollution (ICPEP-5), organized by International Society of Environmental Botanists 24-27 Feb. 2015 at CSIR-NBRI, Lucknow.
11. Sayyada Khatoon, MM Pandey, Subha Rastogi, **Saba Irshad** and AKS Rawat, Seasonal variation in phytoconstituents of an Ayurvedic drug 'Sarapunkha', International conference on Medicinal Plants: Resource for affordable New Generation Healthcare, organized by CSIR-Central Institute of medicinal and Aromatic Plants, Lucknow, March 20-22, 2015, pp-78.
12. **Saba Irshad**, Sayyada Khatoon, Siddhartha Pragyadeep and Ajay Kumar Singh Rawat, Quality control parameters for the identification of Ayurvedic Rasayana drug

‘Shankhpushpi’ In National Conference & Exhibiton on Divine Medicinal, Plants Based Medicinal Products, Panchagavya and their Role in Integrated Rural Development, 21-22 Feb 2014 at Vigyan Bhawan, New Delhi.

13. **Saba Irshad**, Sayyada Khatoon, Shikha Kothiyal and Ajay Kumar Singh Rawat, Quality control parameters for the identification of Ayurvedic drug ‘Musaakarni’ In 10<sup>th</sup> International conference on “Ayurveda & Lifestyle Disorders”, 15-16 Feb 2014 at Indra Gandhi Pratishthan Kendra, Lko.
14. Sunita Lal, Rakesh Singh, **Saba Irshad**, Anju Singh and Lokesh Panwar, ‘Genetic diversity assaessment of *Colletotrichum falcatum* isolates causing red rot of sugarcane’. In **National conference on microbe promoting crop health productivity and sustainability. 26-27 Oct. 2013.**
15. **Saba Irshad**, Madan Mohan Pandey, Sayyada Khatoon, Macro-Microscopical tools for the Identification of Shankhpushpi, In **National Seminar Botany 2013, on New Trends in Plant Sciences, 21-22 Sept. 2013.**
16. **Saba Irshad**, Jyotsna Singh, Poonam Kakkar, Sayyada Khatoon, Shanta Mehrotra, Molecular characterization of ‘Prishnparni’ –An ingredient of Rasayana Drug ‘Dashmoola’ and Identification of its adulterant/substitute by RAPD Analysis, In **17<sup>th</sup> Annual Convention of Society of paharmacognosy and International Symposium on Frontier in herbal Cosmetics and Nutraceuticals, 23-24 Nov. 2013.**
17. **Saba Irshad**, Jyotsna Singh, Poonam Kakkar, Sayyada Khatoon, Shanta Mehrotra, Molecular Characterization of ‘Kanthkari’, ‘Brihati’ and their Substitutes/Adulterants and Identification of Market Samples through RAPD, ID No. 11508, In **“5<sup>th</sup> World Ayurveda Congress”, Dec. 7-10, 2012.**
18. **Saba Irshad**, Jyotsna Singh, Poonam Kakkar and Shanta Mehrotra, ‘Molecular characterization of *Shalparni*’ - An important ingredient of ‘Dashmoola’ In **the National Smposium on “Environmental Stress and Bioresource Management” Nov. 20-22, 2008.**
19. J Singh, **S Irshad**, S Mehrotra and P Kakkar; Molecular characterization of four important ingredients of “Dashmoola”. In **the International Symposium on current status and opportunities in Aromatic and Medicinal plants Feb 21-24, 2010.**
20. Sayyada Khatoon, **Saba Irshad**, Harsh singh and AK Goel; Chemotype of aparasitic plant, *Dendrophthoe falcate* (Linn. f.) Etting (Lorenthaceae), In **the National Smposium on “Environmental Stress and Bioresource Management” Nov. 20-22, 2008.**



1. Participated in One Day Sensitization Workshop on “**Popular Science Writing**” under DST Awsar Programme organized by DST, Vigyan Prasar and CSIR-NBRI, at CSIR-NBRI Lucknow, on 30 September, 2019.
2. Participated in National Workshop on “**Science Communication and Film Making**” organized by Vigyan Prasar, Department of Science and Technology, Government of India in collaboration with CSIR-NBRI, Lucknow from 28-30 March, 2019 at CSIR-NBRI Lucknow.
3. Participated in Workshop on “**NGS Data Analysis & Computer Aided Drug Designing**” organized by Institute of Advanced Computing (IDAC), ONGC Center of Advanced Studies (OCAS), University of Lucknow, Lucknow from 22-24 Nov. 2018.
4. Participated in Workshop on “**Bio-entrepreneurship and Bio-entrprise creation**” organized by National Academy of Science, India; Biotech Constorium India Limited New Delhi and Biotech Park, Lucknow on Dated 16<sup>th</sup>-17<sup>th</sup> September 2016 at Biotech Park Lucknow.
5. **Poster presentation** of “Ecotypic variation study for quality control in Selaginella bryopteris ‘Sanjeevni Booti’, **Saba Irshad**, Shwet Singh, PB Khare, AKS Rawat and Sayyada Khatoon, p-106 in a **cryptogam Research Progress & Prospects Lucknow**, on September 29, 2015.
6. **Oral Presentation** In National Seminar on “Quality, Safety & Efficacy of Ayurvedic Drugs” at Deendayal Research Institute, Arogyadham, Chitrakoot, Sponsored by Department of AYUSH, India, on 23-24 May 2015.
7. **Oral Presentation** In Second National Seminar on “Relevance of Methods of Studies in Unani Medicine” at Dept. of Inlmul Advia, Faculty of Unani medicine, Aligarh Muslim University, Aligarh, on 27-28 November, 2014.
8. Participated in One day sensitization programme on “**Intellectual Property Rights (IPR) For MSME & Perfumery Industries**” Sponsored by DC, MSME, Govt of India on 22<sup>nd</sup> March 2014 at CSIR-NBRI, Lucknow.
9. **Oral presentation** In 10<sup>th</sup> International conference on “Ayurveda & Lifestyle Disorders”, 15-16 Feb 2014 at Indira Gandhi Pratishthan Kendra, Lko.
10. **Poster Presentation** in National Seminar Botany 2013, on New trends in Plant Sciences organized by Department of Botany, Aligarh Muslim University, Aligarh on 21-22 Sept. 2013.
11. **Poster presentation** in 17<sup>th</sup> Annual Convention of Society of paharmacognosy and International Symposium on Frontier in herbal Cosmetics and Nutraceuticals, organized by Pharmavision, Gyani Inder Singh Institute of Professional Studies, Dehradun, Uttarakhand, from 23-24 Feb. 2013.

12. **Poster presentation** in National symposium on “**Environmental stress and Bioresource Management**” organized by department of Botany Jamia Hamdard New Delhi and The Academy of Environmental Biology, Lucknow, from Nov. 20-22, 2008
13. Participated in Training Program “**Indo-Thai MAP’s Workshop**” organized by CIMAP, from 9<sup>th</sup> -13<sup>th</sup> January, 2006
14. Participated in “**National Symposium on Plant Biotechnology: New Frontiers**” organized by CIMAP in science convention center, from 18-20 November, 2005

### **Contribution in organizing Seminar/Conference**

Worked as **Local committee member (Resource person)** In International Conference on New age opportunities and challenges for quality safety and GMP in herbal drug Development. At CSIR-NBRI during 22-23 Feb. 2019.

Awarded for excellent execution of Summer Plant Science Fest-2019 at CSIR-NBRI, Lucknow during 11-13 April 2019.

### **Laboratory Technique Expertise**

#### **Microscopes**

- Using light microscopes (LM) and phase contrast microscope for identification important microscopic characters of crude materials of plants.

#### **Chromatographic Techniques**

##### **HPTLC**

- Using HPTLC analysis, qualitative and quantitative analysis of plant extracts.

##### **UV/IR Spectroscopy**

- Hands on experience with FT Infrared and Ultraviolet-Visible spectrophotometers for analysis of herbal drugs used in pharmaceutical industries.

##### **PCR Thermo cycler for DNA based techniques**

- Good handling experience of single block and multi block thermo cycler for DNA based work of herbal drugs in Pharmaceuticals and biotech companies

##### **Statistical analysis skill**

- ANOVA
- SPSS
- NTSYS
- 

##### **Computer skill**

- A good operating of the several computer softwares of Microsoft Window, Endnote, Adobe Photoshop, Adobe illustrator, Corel paint.

- Use of Scientific Software like ChemDraw, SPSS, etc for scientific writing, presentation and data analysis.
- Patent search and analysis software/databases viz. Patbase, Patsheer and Thomson innovation, Vintage point.

**Personal strength**

- Good laboratory management skills.
- Skilled for preparation of scientific manuscripts, reviews, reports and conference presentations.
- Ability to interact and associate with scientists from different disciplines and enjoy collaborative ventures.

## References:

### **Dr Sayyada Khatoon**

Principal Scientist  
Pharmacognosy and Ethnopharmacology  
Division  
CSIR-National Botanical Research Institute  
Lucknow, UP-226001, India  
Contact no. 9105222297817  
Email- [sayyadak@yahoo.com](mailto:sayyadak@yahoo.com)

### **Dr. Sunita Lal**

Principal Scientist  
Indian institute of Sugarcane Research (ICAR)  
Lucknow, UP, 226002, India  
Email- [sunitalal\\_2015@yahoo.com](mailto:sunitalal_2015@yahoo.com)

### **Dr. Neeraj Tandon**

Scientist G and head  
Medicinal Plant Division  
Indian Council of Medical Research  
Ansari Nagar, New Delhi-110029, India  
Mobile: +91-9811462137  
Email: [tanneeraj@gmail.com](mailto:tanneeraj@gmail.com)

### **Dr. A.K. S. Rawat**

Head of the Department  
Pharmacognosy and Ethnopharmacology  
Division  
CSIR-National Botanical Research Institute  
Lucknow, UP-226001, India  
Contact no. 9105222297816  
Email: [rawataks@rediffmail.com](mailto:rawataks@rediffmail.com)

### **Dr. Poonam Kakkar**

Head Herbal Research Section  
CSIR-Indian Institute of Toxicology  
Lucknow  
Post Box No.80, MG Marg Lucknow, 226001  
(UP), India  
Contact no.-915222213786  
Email-[poonam\\_kakkar@yahoo.com](mailto:poonam_kakkar@yahoo.com)