**Nishat Fatima, *PhD***

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**RECENT POSITION**

Assistant Professor, Department of Chemistry, Shia Post Graduate College, Lucknow Since August, 2019.

**EDUCATION**

**PhD** (Medicinal chemistry): 2017

Integral University, Lucknow, India- KGMU, Lucknow, UP, India

*Thesis title:*“Isolation, purification and characterization of anti-cancer phytochemicals from some Indian medicinal plants”

**M.Sc.** (Chemistry): 2008, 69.22%

University of Lucknow, U.P., India.

**B.Sc** (Zoology, Botany, Chemistry): 2006, 71.61%

University of Lucknow, UP, India.

**Intermediate** (Science stream): 2001, 62%

UP Board

**High School** (Science stream): 1999, 63.5%

UP Board

**RESEARCH EXPERIENCE-**(2012-2017)

* Identified various anticancer compounds from Indian ethno-medical plants. Several potent anticancer compounds were isolated and identified by various analytical techniques such as HPLC (High Performance Liquid Chromatography), TLC (Thin Layer Chromatography), HPTLC (High Performance Thin Layer Chromatography), GC (Gas Chromatography), PC (Paper Chromatography) and CC (Column Chromatography). Spectral techniques like NMR, UV, IR, Mass (ESI-MS, LC-MS/MS) were used for identification and structural elucidation of bioactive phytochemicals.
* Evaluated anticancer activity in two potent medicinal plants *Anthocephalus cadamba* and *Wrightia tinctoria*. *In-vitro* anticancer activity was performed by MTT assay, colonogenic assay, ROS generation, Annexin V-FITC/PI dual dye staining method by flow cytometry and DNA fragmentation assay.

**SUBJECT EXPERTISE (ACADEMICS):**  Organic, Inorganic and Physical Chemistry

**TECHNICAL EXPERTISE**

* **Natural product isolation techniques:** Extraction techniques, method development in preparative and semi-preparative HPLC, GC-MS and LC-MS. Isolation techniques including normal phase column chromatography and flash chromatography.
* **Spectroscopic techniques:** FT-NMR, One-dimensional (1H, 13C, Dept), homonuclear two-dimensional (Cosy, Tocsy) and heteronuclear two-dimensional (HSQC, HMBC) NMR, HPLC/UPLC-HRMS, FAB-MS, MALDI-MS, MS/MS and MS. UV-VIS spectroscopy, Interpretation of data and applications in Drug Discovery.
* **Cell Culture techniques**: Mammalian cell culture (suspension and adherent cancer cell lines of different cancer types), Cell based colorimetric and fluorimetric assays. Flow cytometry based assays and CFSE and Propidium iodide based cell sorting. Confocal and fluorescence microscopy.
* **Trace metal detection techniques:** Inductively coupled plasma optical emission spectrometry (ICP-OES), Atomic Absorption Spectroscopy (AAS), Microwave digestive system (MDS)
* **Statistics and Bioinformatics**: ChemDraw, TopSpin 2.1, GraphPad Prism, MS office

**DETAILS OF COURSES / PROGRAMS ATTENDED:**

* Participated in FDP Program organised by Atma Ram Sanatan Dharma College (Delhi University) from 05-06-2020 to 11-06-2020,
* Participated in FDP program organised by Teaching Learning Centre, Ramanujan College, Delhi under Ministry of Human Resource Development from 23-06- 2020 to 29-06-2020.
* Attended webinar on E-Learning: Need of the Hour Organised by - E-Content Modalities Compliance Committee, University of Lucknow, Lucknow, Uttar Pradesh, India on 22-05-2020
* Workshop under \*Faculty Development Programme\* by IQAC Shia P.G. College, on 02-06-2020

**WORKSHOPS AND TRAINING**

* Successfully completed three months (21/08/2017- 20/11/2017) certificate course in CSIR-Central Drug Research Institute on skill development in advanced spectroscopic techniques (NMR, MASS, UV/IR) to gains the knowledge of operating, maintenance of state-of-art spectrometers and also the analysis of the spectroscopic data.
* Attended HPLC/UPLC training programme organised in collaboration with Waters India (P) Ltd., at SAIF, CSIR-CDRI., Lucknow from 5th-6th September 2017.
* Attended CME and workshop on Molecular Diagnosis of Infectious Diseases at Department of Microbiology, KGMU at 21 July 2014.
* Attended workshop on Molecular Simulation and Drug Design at Biotech Park, Lucknow from 21-23 March, 2013.

**FELLOWSHIP/GRANT**

Award of Women Scientist-A fellowship funded by Department of Science and Technology (SR/WOS-A/CS-109/201), Ministry of Science and Technology, New Delhi, Govt. of India, from 2nd June, 2014 to 1st December, 2017

**MEMBER OF SCIENTIFIC/SOCIAL COMMUNITY**

* Life member of Indian Science Congress Association (L27664), Kolkata, India.
* Life member of Indian Society for Lead Awareness and Research (InSLAR), Lucknow, India.

**PUBLICATIONS**

**Research paper**

1. **Fatima, N.,** Ahmad, M.K., Ansari, J.A., Ali, Z., Khan, A.R., Mahdi A.A. (2016) Anticancer, antioxidant potential and profiling of polyphenolic compounds of *Wrightia tinctoria* Roxb. (R.Br.) bark. *Journal of Advance Pharmaceutical Technology Research,* 7,159-65.
2. **Fatima, N.,** Ahmad, M.K., Ansari, J.A., Khan, H.J., Rastogi, N., Srivastava, S.K., Ahmad, S., Ali, Z. (2016). Antiproliferative and antioxidant studies of *Anthocephalus cadamba* Rox. Miq. Bark. *Indian Journal of Pharmaceutical Science*, 78(4), 525-531.
3. Ansari, J.A., Rastogi, N., Ahmad, M.K., Mahdi, A.A., Khan, A.R., Thakur, R., Srivastava, V.K., Mishra, D.P., **Fatima, N.,** Khan, H.J., Waseem, M. (2017). ROS mediated pro-apoptotic effects of *Tinospora cordifolia* on breast cancer cells. *Front Biosciences* (Elite Ed), 1(9), 89-100.
4. Shivakumar, G.C., Sahana, S., **Fatima, N.,** Chaurasia, A. (2016). Comparative Evaluation of Curcumin Extracts and Lycopene in Leukoplakia. *Indian Journal of Dental Education, 9*(3), 153-157.
5. Ansari, J.A., Khan, A.R., Ahmad, M.K., **Fatima, N.,** Rastogi, N., Khan, M.F., Khan, H.J., Mahdi, A.A. ( 2016) Phytochemicals, Antioxidant and Antiproliferative Studies of Some Medicinal Plants from Indian Sub-continent *British Journal of Pharmaceutical Research, 11*(6), 1-11.
6. Ansari, J.A., Ahmad, M.K., Khan, A.R., **Fatima, N.,** Khan, H.J., Rastogi, N., Mishra, D.P., Mahdi, A.A. (2016). Antiproliferative and antioxidant activity of *Zingiber officinale* *Roscoe* rhizome. *Indian Journal of Experimental Biology, 54*, 767-773
7. Khan, H.J., Ahmad, M. K., Khan, A. R., Rastogi, N., Ansari, J. A., **Fatima, N.,** Satyanarayan, G. N.V., Mahdi, A.A. (2016). GC-MS/MS Based Identification of Bioactive Principles of Chloroform fraction of *Swertia Chirayatia* (Chirata). *Oriental. Journal of Chemistry, 32*(2), 875-883.
8. Khan, H.J., Ahmad, M.K., Khan, A.R., Rastogi, N., Mahdi, A.A., Ansari, J.A., **Fatima, N.,** Satyanarayan, G. N.V. (2016). Identification of Anticancer and Antioxidant phytoconstituents from chloroform fraction of *Solanum nigrum* L. berries using GC-MS/MS analysis. *Indian Journal of Experimental Biology. 54*, 774-782.
9. Mahdi, A. A., Ansari, J. A., Khan, H. J., **Fatima, N**., Lakshmi, V., Ahmad, M. K.,Khan, A.R., Mahdi, A.A. (2013). Anticancerous medicinal plants: A review. *International Journal of Advances in Pharmaceutical Research. 4*, 1706-22.
10. Ansari, J. A., Ahmad, M.K., Verma, A.K., **Fatima, N**., Khan, H.J., Khan, A.R., Mahdi, A. A. (2015). Microwave assisted determination of 17 minerals and four toxic metals in traditionally used medicinal plant *Zingiber officinale Roscoe* by Inductively Coupled Plasma-Optical Emission Spectrometer. *International Journal of Advanced Research.* *3*(4), 879-887.
11. Ishrat, N., Ansari, J. A., Gautam, S., **Fatima, N**., Abid, M., Hassan, F., Mahdi, A. A. (2017). Glucagon like Peptide-1 Receptor Agonists and its Analogues in the Management of type 2 Diabetes Mellitus Patients: An Overview. *Journal of Biological and Chemical Research.* *34*(2), 610-642.

**Book Chapter**

1. Ansari, J.A., Fatima Nishat., Srivastava, S., Heavy Metals Toxicity in Biological Systems ISBN: 978-93-86841- Edition: 2019, Discovery Publishing House Pvt. Ltd., New Delhi (India).
2. **Fatima**, N., Mahdi, A.A., Ansari, J.A., Ali, Z. Ethnobotany, Phytochemistry and Pharmacology of *Wrightia tinctoria*. Biochemistry and Therapeutic Uses of Medicinal Plants. ISBN: 978-93-5056- Edition: 2017 Published by: Discovery Publishing House Pvt. Ltd., New Delhi (India).
3. **Fatima, N.,** Ahmad, M. K., Ansari, J.A., Ali, Z. Mahdi, A.A. (2017). Therapeutic significance, phytochemistry and pharmacological activities of *Anthocephalus cadamba* (Roxb.) Miq: An overview. Phytochemistry and Pharmacology of Medicinal Herbs. ISBN: 978-93-85995-46-0. Lenin Media Private Limited, Delhi.
4. **Fatima, N**., Ansari, J.A., Mahdi, A.A. (2017). Phytochemicals: Unique aspects as anticancer agents. Molecular Biology and Pharmacognosy of Beneficial Plants. ISBN: 978-93-85995-56-9. Lenin Media Pvt. Limited, Delhi, India.
5. **Fatima, N**., Ansari, J.A., Naqvi, T.S., Khan, A.R., Mahdi, A.A. (2017). Heavy Metals, Incidence, Chemical Risk and Toxicity for Medicinal Plants: A Review. Herbal Medicine and Modern Drug Discovery. ISBN: 978-93-85995-52-1. Lenin Media Pvt. Limited, Delhi, India.
6. Ansari, J.A., **Fatima, N**., Mahdi, A.A. (2017). Toxicity of Heavy Metals as Carcinogenic Agent: Mechanism and Prevention by Natural Products. Molecular Biology and Pharmacognosy of Beneficial Plants. ISBN: 978-93-85995-56-9. Lenin Media Pvt. Limited, Delhi, India.
7. Ansari, J.A., Mahdi, A.A., **Fatima, N.,** Khan, A.R. (2017). *Tinospora cordifolia* (Willd.) Miers ex Hook. F. & Thoms. as a Potent Ethno-Medical Medicinal Plant: A Rational Review. ISBN: 978- 93-5056-866-8, Discovery Publishing House Pvt. Ltd., New Delhi (India).
8. Hassan F., Ansari, J.A**.**, Ahmad S., **Fatima, N.**, Khan, A.R. (2017). The Role of Natural Products in Diabetes Control. Molecular Biology and Pharmacognosy of Beneficial Plants. ISBN: 978-93-85995-56-9. Lenin Media Pvt. Limited, Delhi, India.
9. Ansari, J.A., Ahmad, M. K., **Fatima, N**., Khan, A.R., Mahdi, A.A*.*(2017) *Zingiber officinale* *Roscoe* as a natural gift; An overview of its ethnomedical significance. Phytochemistry and Pharmacology of Medicinal Herbs. ISBN: 978-93-85995-46-0. Lenin Media Private Limited, Delhi.
10. Hassan F., Ansari, J.A**.**, Ahmad S., **Fatima, N.**, Khan, A.R. (2017). The Role of Natural Products in the Control of Diabetes. ISBN: 978-93-85995-52-1.Herbal Medicine and Modern Drug Discovery. Published by Lenin Media Pvt. Limited, Delhi, India.
11. 10. Ansari, J.A., **Fatima, N.,** Khan, A.R., Abid, M., Naqvi, T.S., Mahdi A.A. (2017). Naturally occurring secondary metabolites as potent anticancer agents. ISBN: 978-93-85995-52-1.Herbal Medicine and Modern Drug Discovery. Published by Lenin Media Pvt. Limited, Delhi, India.
12. Ansari, J.A., **Fatima N**., Abid, M., Naqvi, T.S., Mahdi, A.A. (2017). Phytochemical and Pharmacological Review of Musa paradisiacal L. ISBN: 978-93-85995-52-1. Herbal Medicine and Modern Drug Discovery. Published by Lenin Media Pvt. Limited, Delhi, India.

**CONFERENCES/ MEETINGS/ABSTRACTS**

**Oral presentations**

1. **Fatima, N**., Mahdi, A.A., Ansari, J.A., Ahmad, M.K., Narayan, S., Patel, D.K. Evaluation of *Wrightia tinctoria* non-polar fractionfor antiproliferative activity and chemical characterization. 44th National Conference of Association of Clinical Biochemists of India (ACBICON 2017). KGMU, Lucknow, 4th-6th December, 2017, FP-74.
2. **Fatima, N**., Ahmad, M.K., Ansari, J.A., Ali, Z., Khan, H.J., Rastogi, N., Khan, A.R., Mahdi, A.A. Anti-radical and anticancer compounds from non polar fraction of . *Wrightia tinctoria* (R.Br.): A bioassay guided approach. International conference on Biotechnological, advancements in free radical biology and medicine. Integral University, Lucknow, 23ed-25th January, 2017, P-73.
3. **Fatima, N**., Ahmad, M. K., Ansari, J. A., Ali, Z., Khan, A. R., Mahdi A. A. Anticancer, Antioxidant Potential and Profiling of Polyphenolic Compounds of *Wrightia tinctoria* Roxb. (R.Br.) bark by HPLC-DAD. NRSM 2016.National Research Scholars Meet in Life Sciences, 15-16 December 2016, Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), Tata Memorial Centre, Navi Mumbai, Maharashtra. INDIA.
4. **Fatima, N.**, Ansari, J. A., Ahmad, K., Khan, H. J., Khan, A. R., Ali, Z., Mahdi, A. A. Phytochemical investigation of *Wrightia tinctoria* (Roxb.) R.Br. National conference on novel tools and treatment approaches in health care system, 3rd march 2015, D/o pharmacy, Integral University, Lucknow.
5. Ansari, J.A., **Fatima, N.**, Ahmad, M.K., Khan, A. R., Mahdi, A.A. Isolation and characterization of anticancer compounds from *Tinospora cordifolia*. National symposium on “Changing trends in medical biochemistry in the new millennium”. 4th February, 2017, department of biochemistry, KGMU, Lucknow. P-15.
6. Ansari, J.A., Mahdi, A.A., Ahmad, M.K., **Fatima, N**., Khan, A.R., Narayan, S., Patel, D.K. GC-MS/MS analysis of anticancer sub-fraction from Tinospora Cordifolia. 44th National Conference of Association of Clinical Biochemists of India (ACBICON 2017). KGMU, Lucknow, 4th-6th December, 2017, FP-73

**Poster presentations**

1. **Fatima, N**., Ansari, J. A., Ahmad, M. K., Khan, A. R., Ali, Z., Abid, M., Mahdi, A. A. Identification of promising antiproliferative candidates from chloroform fraction of Shweta Kutaja (Wrightia tinctoria). National symposium on “Changing trends in medical biochemistry in the new millennium”. 4th Febuary, 2017, department of Biochemistry, KGMU, Lucknow.P-34
2. Khan, H. J., Ahmad, M. K., Khan, A. R., Waseem, M., Mahdi, A.A., Ansari, J.A., **Fatima, N**. Identification of antiproliferative constituents of *Swertia chirayata* (Chirata) National symposium on “Changing trends in medical biochemistry in the new millennium”. 4th Febuary, 2017, department of biochemistry, KGMU, Lucknow.P-24
3. **Fatima, N**., Mahdi, A. A., Ansari, J. A., Ahmad, M. K., Khan, H. J., Khan, A. R., Ali,Z. Evaluation of *in vitro* antioxidant activity of *Anthocephalus cadamba* (Roxb.) Miq bark fractions. “National symposium on Interfacing chemical biology and drug design” Amity University, Lucknow, 24th – 25th February, 2015, PP-65.
4. **Fatima, N**., Ansari, J.A., Ahmad, M.K., Khan, H. J., Ali, Z., Mahdi, A. A. *In vitro* antioxidant activity of *Anthocephalus cadamba* (Roxb.) Miq and *Wrightia tinctoria* R. Br. “International conference on recent advances in research & treatment of human diseases”, Nizam’s Institute of Medical Sciences, Hyderabad, 9th-11th January 2015, PP-35.
5. Ansari, J.A., Ahmad, M.K., **Fatima N**., Khan, H.J., Hussain, S.R., Abid, M., Verma,A. K., Mahdi, A. A., Analysis of Lead in water samples from Lucknow city by ICP-OES. 3rd Annual meeting of Indian Academy of Biomedical Sciences, Department of Biochemistry, JNMC, AMU, Aligarh, 14th-15th December, 2013. PP-57 **(Best poster Award).**
6. Ansari, J.A., Khan, H.J., **Fatima, N.**, Lakshmi, V., Ahmad, M.K., Khan, A.R., Mahdi, A.A. Preliminary phytochemical analysis of *Solanum nigrum*. International conference on Chemistry: Frontiers and Challenges, AMU, Aligarh, 2nd-3rd March 2013, P-168 ID:481.
7. **Fatima, N.**, Ali, Z., Ansari, J.A., Khan, H.J., Ahmad, M.K., Khan, A.R., Mahdi, A.A. Preliminary phytochemical analysis of traditionally used medicinal plant *Anthocephalus cadamba*. International conference on Chemistry: Frontiers and Challenges, AMU, Aligarh, 2nd-3rd March 2013, P-168 ID:480.
8. Khan, H. J., Ansari, J. A., **Fatima, N.**, Ahmad, M. K., Khan, A. R., Mahdi, A. A. Evaluation of phytochemical profile of *Swertia chirayata*. International conference on Chemistry: Frontiers and Challenges, AMU, Aligarh, 2nd-3rd March 2013, P-159 ID:453.
9. Ansari, J.A., Ahmad, M.K., Verma, A.K., **Fatima, N.,** Khan, H J., Abid, M., Khan, A.R., Mahdi, A.A. A simple Microwave assisted method for determination of Heavy Metals in Whole Blood by ICP-OES. National seminar on metal toxicity and oxidative stress, 23rd-24th September, 2014. D/o Biosciences, Jamia Millia Islamia, New Delhi.

10.**Fatima, N**., Mahdi, A.A., Ansari, J.A., Ahmad, M.K., Khan, H.J., Khan, A.R., Ali,Z. Evaluation of in vitro antioxidant activity of *Anthocephalus cadamba* (roxb.) Miq bark fractions. “National symposium on Interfacing chemical biology and drug design” Amity University, Lucknow, 24th – 25th February, 2015, PP-65.

11.**Fatima, N**., Ansari J. A., Ahmad M. K., Khan H. J., Ali Z., Mahdi A. A. *In vitro* antioxidant activity of *Anthocephalus cadamba* (Roxb.) Miq and *Wrightia tinctoria* R. Br. “International Conference on Recent Advances in Research & Treatment of Human Diseases”, Nizam’s Institute of Medical Sciences, Hyderabad, 9-11th Jan 2015, PP-35.

**PROFESSIONAL REFERENCES:**

1. **Dr Abbas Ali Mahdi** (Mentor & Ph.D. Supervisor)

Vice Chancellor, Era University, Lucknow**.**

Professor , Department of Biochemistry

President, InSLAR, President, IABS

Vice-President, SFRR India KGMU, Lucknow , India

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