CONTACT INFORMATION

Dr. Tareq A. Wani
CSIR-**Pool Scientist**
Plant Tissue Culture Lab
Department of Botany
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District: Kulgam, Kashmir

RESEARCH INTERESTS AND VISION

My broader areas of research are Reproductive Biology, Molecular Biology and Tissue Culture for biodiversity conservation. I seek to use multipronged strategy to elucidate and understand the basic biology of plants, bioprospection of highly prioritized medicinal and aromatic plants of Kashmir Himalayas, threat status and conservation measures using *in vitro* approaches, Active secondary metabolites and elucidation of important pathways responsible for their production, rate limiting pathway genes. I am a highly motivated and hardworking individual who works well independently as well as collaboratively in teams of scientists and scholars from diverse backgrounds. In addition, I have an experience in mentoring and training technicians and graduate/undergraduate students with little prior research skills. I also believe that with my sound knowledge/understanding of the subject and related/required technical expertise. Currently, in the department of Botany, I am teaching the basic molecular biological techniques to the students pursuing integrated M.Phill-PhD programme. I have three years of regular teaching experience at University level. Also, I am taking practicals on phycology to Msc students.

ACADEMIC APPOINTMENTS

University of Kashmir, Srinagar, India — Dec. 2019 to Till date
Department of Botany
CSIR- POOL SCIENTIST (SRA)

University of Kashmir, Srinagar, India — April 2017 to April 2019
Department of Botany
DST-SERB- National Postdoc Fellow

EDUCATION

CSIR- Indian Institute of Integrative Medicine (IIIM), Jammu, India — 2012 to 2017
PhD— Plant Sciences (Botany)
Degree awarded by **University of Jammu**, Jammu, India
Advisor's: Dr. Surrinder K. Lattoo and Prof. Namrata Sharma

Thesis title: Studies on breeding system and molecular cloning of auxin response factor and chalcone synthase genes in *Grewia asiatica* Linn.

Himachal Pradesh University, Shimlah, India — 2006 – 2008
M.Sc. Botany

University of Kashmir, Srinagar, India — 2003 – 2005
B.Sc. English, Botany, Zoology and Chemistry

HONORS, AWARDS, AND GRANTS (NATIONAL/INTERNATIONAL)

Awarded **CSIR-SRA Pool Scientist**, by the Council of Scientific and Industrial Research, Govt. of India with a grant for 3 years @ 9.40 lac per year — **December 2019**

Received travel grant to attend **ACSE/ACSTM 2019 in Dubai** — **November 2018**

Received certificate of excellence in Peer-Reviewing from **Asian Journal of Research in Biosciences** — **November 2018**

Qualified Jammu and Kashmir state eligibility test for the recruitment of Assistant Professor **(JK-SET)** — **July 2018**

Awarded **National Postdoc Fellowship** Award, by the Department of Science and Technology, Govt. of India with a grant for 2 years @₹ 9.60 lac per year — **2017-2019**

Received best paper presentation award at **"3rd International Conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET) Organized by Shri Mata Vaishno Devi University (SMVDU), Katra, India**. — **November 2016**

Received best oral presentation award at "**11th JK Science congress held at University of Kashmir, Srinagar.**	**October 2015**
Received best poster presentation award at "**International Conference on Medicinal Plants: Resource for Affordable New Generation Healthcare. CIMAP",** Lucknow, India.	**March 2015**
Qualified Agricultural Scientists Recruitment Board–National Eligibility Test (**ASRB-NET**) held by Indian council of Agricultural research (**ICAR**), New Delhi, India	**November 2014**
Awarded **certificate of excellence** in the quiz on Atmospheric Ocean Science and Technology conducted by Ministry of Earth Science, Govt. of India at the 101st Indian Science Congress, Jammu, India	**February 2014**
Qualified **Graduate Aptitude Test in Engineering (GATE)** vide all India rank **58/13262.**	**March 2011**
Qualified National Eligibility Test (**NET**) held jointly by Council of Scientific and Industrial Research (**CSIR**) and University Grants Commission (**UGC**), New Delhi, India vide all India rank **0057/1335.**	**December 2009**

MEMBERSHIP OF SCIENTIFIC SOCIETIES

Member Indian Science Congress Association, Kolkata, India	2013
Editorial Member of **Journal of Plant Sciences**	2017
Editorial Member of **Advances in Biomedicine and Pharmacy**	2016
Reviewer of **Asian Journal of Research in Biosciences**	2018

EXPERIENCE

University of Kashmir, Srinagar, India CSIR-Pool Scientist (SRA)	Dec.2019 to Till date

University of Kashmir, Srinagar, India — April 2017 to April 2019
DST-SERB-National Postdoc Fellow

Sep.2010-Nov 2016

CSIR-IIIM, Jammu, India
PhD Research Fellow

Lecturer in secondary school education Jammu and Kashmir at T.I.A.I. Kulgam, Kashmir, India- 192231 — Jan 2008-Jan 2010

PEER REVIEWED JOURNAL PUBLICATIONS

J 25 Sumeet Kour, **Tareq A. Wani** et al. **Chemical characterization and the intrusion through elicitation and Agrobacterium rhizogenes mediated hairy root transformation in Saussurea costus C.B. Clarke**. ***Physiology and Molecular Biology of Plants*** **(Revision submitted 2022).**

(* Corresponding author).

J 24 Nabi, Nelofar Gulam, **Tareq A. Wani** et al. **Efficient in vitro regeneration with an impetus on chemotypic variation in *Spilanthes acmella* (L.) Murr.** ***South African Journal of Botany*** **(Accepted 2022).**

(* Corresponding author).

J 23 **Wani, Tareq A.,** Zahoor A. Kaloo, and Nisar A. Dangroo. "*Aconitum heterophyllum* Wall. ex Royle: A critically endangered medicinal herb with rich potential for use in medicine." **Journal of Integrative Medicine (2021).**

(* Corresponding author).

J22 **Wani, Tareq A.,** Zahoor A. Kaloo, and Subzar A. Reshi. "Molecular characterization of 3-hydroxy-3-methylglutaryl-CoA reductase (HMGR) in relation to aconite biosynthesis in *Aconitum heterophyllum* Wall ex Royle." **Gene Reports 26 (2022): 101432**.

(* Corresponding author).

2018

J21 Nabi, Nelofar Gulam, **Tareq A. Wani**, and Zahoor A. Kaloo. "In Vitro Conservation Strategies for Sustainable Production of Secondary Metabolites in *Psoralea corylifolia* L**." Proceedings of the National Academy of Sciences, India Section B: Biological Sciences 91, no. 4 (2021): 959-970.**

(* Corresponding author).

J-20 Mehpara Maqsood , Mir Khusrau , Zahoor Ahmad Kaloo , **Tareq A. Wani ,**

Abdul Mujib Colchicine Quantification in Salt Stress Treated Culture of Colchicum luteum Baker by High Pressure Liquid Chromatography **Eur J Biol.13.12.2020**
DOI: 10.26650/EurJBiol.2020.0013

J-19 Amin S, **Wani TA***, Kaloo ZA, Singh S, John R , Majeed U, Shapoo GA (2018) Genetic stability using RAPD and ISSR markers in efficiently *in vitro* regenerated plants of *Inula royleana* DC **Meta gene** 18 (2018) 100–106
(* Corresponding author).

J-18 Farhana Maqbool, SeemaSingh**, Wani TA***, Mudasir Ahmad, Bashir A. Ganai, Mahroofa Jan (2018). Phytochemical Screening and Antioxidant Activity of Methanolic Extract of *in vitro* Raised Plants of *Atropa acuminate* Royle. **International Journal of Sciences: DOI: 10.18483/ijSci.1747; Online ISSN: 2305-3925; Print ISSN: 2410-4477**
(* Corresponding author).

J-17 Mudasar Ahmad, **Wani TA** , Zahoor A Kaloo, Bashir A Ganai, Ubaid Yaqoob and Hilal A Ganaie (2018). Conservation through In vitroSeed Germination Studies of *Meconopsis aculeta* Royle: A critically endangered and endemic to Kashmir Himalaya,India. ***Medicinal & Aromatic Plants DOI: 10.4172/ 2167-0412.1000315.***

2017

J-16 Mohd Yaseen, Mudasar Ahmad, **Wani TA** , Manzoor Ahmad, B. A Gani and Rashida Qureshi (2017). Phytochemical screening and antioxidant activity of extracts of the leaf and stem of *Achillea millefolium.* ***International Journal of Advanced Science and Research 6:55-59.***

J-15 **Wani TA**, Pandith SA, Gupta AP, Chandra S, Sharma N, Lattoo SK (2017). Molecular and functional characterization of two isoforms of chalcone synthase and their expression analysis in relation to flavonoid constituents in Grewia asiatica L. ***Plos One*** (https://doi.org/10.1371/journal.pone.0179155).

J-14 **Wani TA*** and **Lattoo SK (2017)** Auxin response factor (GaARF) cloning and expression in relation to reproductive maturation in *Grewia asiatica* L. **Plant gene 12, 123-130**
(*Corresponding author).

J-13 Pandith SA, Dhar N, **Wani TA,** Razdan S, Bhat WW, Rana S, Lattoo SK (2017). Production dynamics in relation to ontogenetic development and induction of genetic instability through *in vitro* approaches in *Pelargonium graveolens*: A potential essential oil crop of commercial significance. ***Flavour Fragr J***; 32: 376-387.

2016

J-12 Shah SN , **Wani TA*,** Ram B, Koul M , Awasthi P, Rajput DS and Reddy GS **(2016).** An efficient protocol for in vitro organogenesis and antioxidant studies in *Melia dubia* Cav. **African Journal of Biotechnology 15(19):768-775.**
(* Corresponding author).

J-11 Shah SN and **Wani TA* (2016).** Family Asclepiadaceae- a reservoir of medicinal plants with special importannce on *Gymnema sylvestre* R.Br. -An Overview. **Advances in Biomedicine and Pharmacy, 3 (1): 59-77.**

(* Corresponding author).

J-10 **Wani TA**, Rana S, Bhat WW, Pandith SA, Dhar N, Razdan S, Chandra S, Sharma N, Lattoo SK (2016). Efficient *in vitro* regeneration, analysis of molecular fidelity and *Agrobacterium tumefaciens*-mediated genetic transformation of *Grewia asiatica* L. ***J Plant Biochem Physiol****; 4.*

J-9 Nilofer Gulam Nabi, **Tareq A. Wani,** Syed Naseer Shah and Mukta Shrivastava **(2016)** *Spilanthes acmella* an endangered medicinal plant - its Traditional, Phytochemical and Therapeutic properties "An overview**. International Journal of Advanced Research (2016), Volume 4, Issue 1, 627 – 639**

J-8 Razdan S, Bhat WW, Dhar N, Rana S, Pandith SA, **Wani TA**, Dhar RS, Vishwakarma R, Lattoo SK (2017). Molecular characterization of *DWF1* from *Withania somnifera* (L.) Dunal: Its implications in withanolide biosynthesis in response to exogenous elicitations. ***J Plant Biochem Biot***; 26: 52-63.

2015

J-7 **Wani TA,** Pandith SA, Rana S, Bhat WW, Dhar N, Razdan S, Chandra S, Kitchlu S, Sharma N, Lattoo SK (2015). Promiscuous breeding behaviour in relation to reproductive success in *Grewia asiatica* L. (Malvaceae). ***Flora***; 211: 62-71.

J-6 Dar BA, Khalid S, **Wani TA**, Mir MA, Farooqui M (2015) Ceria-Based Mixed Oxide Supported CuO: An Efficient Heterogeneous Catalyst for Conversion of Cellulose to Sorbitol. **Green and Sustainable Chemistry**, **5, 15-24.** http://dx.doi.org/10.4236/gsc.2015.51003.

2014

J-5 Pandith SA, Hussain A, Bhat WW, Dhar N, Qazi AK, Rana S, Razdan S, **Wani TA,** Shah MA, Bedi YS, Hamid A, Lattoo SK (2014). Evaluation of anthraquinones from Himalayan rhubarb (*Rheum emodi* Wall. ex Meissn.) as antiproliferative agents. ***S Afr J Bot***; 95: 1–8.

J-4 Bhat WW, Razdan S, Rana S, Dhar N, **Wani TA,** Qazi P, Vishwakarma R, Lattoo SK (2014) A phenylalanine ammonia-lyase ortholog (PkPAL) from *Picrorhiza kurrooa* Royle ex. Benth: Molecular cloning, promoter analysis and response to biotic and abiotic elicitors. ***Gene*** **(2014.06.046)**

2012

J-3 **Wani TA,** Koul P, Ram G (2012) Screening of high yielding genotypes of Pomegranate (*Punica granatum* Linn.) from sub temperate region of Jammu and Kashmir. **Journal of Medicinal and Aromatic Plant Sciences 34(1-2) (2012) 000-000**

J-2 Khan JA, **Wani TA,** Kumar S and Ram G (2012) Ethnomedicinal plants used for toothache in poonch district of Jammu and Kashmir (India). **ASIAN J. EXP. BIOL. SCI**. **VOL 3(2) 2012: 415-419**

2011

J-1 **Wani TA,** Kitchlu S, Ram G (2011) Genetic variability studies for morphological and qualitative attributes among *Jatropha curcas* L. accessions grown under subtropical conditions of North India. ***South African Journal of Botany* 79 (2011) 102–105**

CONFERENCES

C-7 **Wani TA et al. (2017).** Spatial chemical variability of essential oil composition of *Skimmea anquitelia* in relation to its differential in vitro anticancer activity. **National Seminar on Himalayan Biodiversity Characterization and Bioprospection for Sustainable Utilization, University of Kashmir** September 18-19

C-6 **Wani TA et al. (2016).** Molecular characterization of two isoforms of Chalcone synthase in relation to reproductive maturation from *Grewia asiatica* L. **3rd International Conference on Recent Trends and Advancements in Engineering and Technology (ICRTAET) Organized by Shri Mata Vaishno Devi University (SMVDU), Katra, India**. November 17-18 (2016) Page no. 07. **Best Paper presentation Award**

C-5 **Wani TA, (2015).** Conventional and Molecular Approaches of Parthenocarpy in *Grewia asiatica* L. **11th JK Science congress** Organized by **University of Kashmir; DST (GOI); and J&K SC&T Srinagar** October 12-14 (2015) Abstract no. BOT-53. **Best Oral presentation Award.**

C-4 **Wani TA, (2015).** Efficient *in vitro* regeneration, analysis of molecular fidelity and *Agrobacterium tumifaciens*-mediated genetic transformation of *Grewia asiatica* L. **International Conference on Medicinal Plants: Resource for Affordable New Generation Healthcare.** Organized by **CIMAP,** Lucknow March 20-22 (2015). **Best Poster Award.**

C-3 **Wani TA, (2015).** Promiscuous breeding behaviour in relation to reproductive success in *Grewia asiatica* L. **National seminar on "Innovative Trends in**

plant and Microbial Sciences". Organized by Department of Botany University of Jammu, Jammu March 2-3 (2015) Abstract no. 82.

C-2 **Wani TA, (2014).** Participated in **Indian Science congress** held at University of Jammu, Jammu from February 3 to 7, 2014.

C-1 **Wani TA, (2013).** Participated in five days workshop entitled "**National Workshop on Reproductive biology for Biodiversity Conservation "organized by Department of Botany,** University of Jammu in collaboration with centre for Biodiversity studies, BGSB University, Rajouri. (Nov.22-26, 2013)

MANUSCRIPTS IN PROCESS

BOOKS

B-3 **Wani TA** Embodiment of Nanobiotechnology in Agriculture: An Overview **DOI: 10.1007/978-3-030-39978-8_6 In book: Nanobiotechnology in Agriculture**

B-2 Dangroo NA, **Wani TA**, Pandith SA, Ashraf N. *Selected threatened medicinal plants of Himalayas— a rich repository of natural products* (2017). (**Springer briefs**). (**In process)**

B-1 **Wani TA** A Multipronged strategy for the improvement of *Grewia asiatica* L. **(Lambert academic Publishing)** ***978-613-8-33697-6***

PROFESSIONAL COMPETENCES AND SKILLS ACQUIRED

My complete involvement with research has enabled me to develop better understanding and insight for the execution of R&D programmes. This endurance has made me competent enough in reproductive biology, plant tissue culture and molecular biology. Also, metabolic pathway understanding, elucidation and further modulation/engineering with respect to different environmental factors/stress-conditions and the generation of desired products was part of the programme where I was involved in. I have also developed competence for project/paper writing, fund raising and executing the research projects at my own.

*Title:*Bioprospection and conservation measures of *Trillium govanianum* wall.ex D.Don.
Funding agency: Council of Scientific and Industrial Research, Govt. of India, New Delhi.
Budget/Duration/Role: 28.20 lac / 3 years / PI

PROJECTS IMPLEMENTED

Title: Micropropagation under in vitro conditions with an impetus on conservation and molecular characterization of some strategic pathway genes in *Aconitum heterophyllum.*
Funding agency: Department of Science and Technology, Govt. of India, New Delhi
Budget/Duration/Role: 19.20 lac / 2 years / PI

REFEREES

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University of Kashmir,
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