

PROFORMA FOR BIODATA



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3. **Institution:** CSIR-Institute of Himalayan Bioresource Technology, Palampur, Himachal Pradesh-176061, India
4. **Date of Birth:** 28/10/1985
5. **Gender:** Male
6. **Category:** OBC
7. **Whether differently abled:** No
8. **Academic Qualification (Undergraduate onwards):**

Sr. No.	Degree	Year	Subject	University/Institution	% of marks
1	B.Sc.	2006	Chemistry, Botany and Zoology	R.T.M. Nagpur University, Nagpur	67.18
1	M.Sc.	2008	Botany	R.T.M. Nagpur University, Nagpur	74.90
2	Ph.D.	2015	Biotechnology	DIHAR, DRDO, Leh Ladakh Registered to: Jaypee University of Information Technology, Wagnaghat, Himachal Pradesh	-

9. Ph.D. thesis title, Guides name, Institute/Organization/University, Year of Award.

“Biodiversity and conservation of <i>Dactylorhiza hatagirea</i> (D. Don) from Trans-Himalayan Ladakh region of India.”	Guide: DR. Ravi B Srivastava (Ex-Director, DIHAR, DRDO, Leh-Ladakh) Co-guide: DR. Hemant Sood (Assistant Professor, Jaypee University of Information Technology, Wagnaghat, Himachal Pradesh)	24 Sep 2015
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10. Work experience (in chronological order):

Sr. No.	Positions held	Name of Institute	From	To	Pay Scale
1	Senior Scientist	CSIR-IHBT, Palampur	10 th Dec. 2019	till	Pay Level 12 RS. 6.78,800-2,09,200 (7 th Pay commission)
2	Scientist	CSIR-IHBT, Palampur	10 th Dec. 2015	9 th Dec. 2019	Rs.15600-391 00 with Grade Pay of Rs.6600
3	Research Associate	DIHAR, DRDO, Chandigarh	1 st Jan. 2014	1 st Nov. 2015	(Rs. 28,000) 24000+20% HRA

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

Sr. No.	Name of Award	Awarding Agency	Year
1	Research Associateship,	DIHAR, DRDO, Chandigarh,	2014
2	Travel grant received from	DBT, New Delhi	2011

	Department of Biotechnology (DBT) to attend World Orchid Conference, in Singapore.		
3	Senior Research Fellowship	DIHAR, DRDO, Leh	2011
4	Junior Research Fellowship	DIHAR, DRDO, Leh	2009

12. Publications (List of papers published in SCI Journals, in year wise descending order).

Total research publications: 45 (sci journal)

Total impact factor: 85

Citations: 288

https://scholar.google.co.in/citations?hl=en&user=5YaCUhcAAAAJ&view_op=list_works&sortby=pubdate

Recent publications:

Sr. No.	Authors	Title	Name journal	Volume	Page	Year
1.	Shiv Rattan, A Kumar, Dine Kumar, Ashish R Warghat*	Enhanced production of phenylethanoids mediated through synergistic approach of precursor feeding and light regime in cell suspension culture of <i>Rhodiola imbricata</i> (Edgew.).	Applied Biochemistry and Biotechnology	doi.org/10.1007/s12010-022-03914-8.	-	2022
2.	Mahinder Parta Ashish Warghat* , Sanjay Kumar	Cambial meristematic cell culture: a sustainable technology towards <i>in vitro</i> specialized metabolites	Critical Reviews Biotechnology	doi.org/10.1080/03680764.2022.2095995	-	2022

3.	Mahinder Parta Pankaj Kumar Pawan Kumar Probir Kumar P Dinesh Kumar Ashish Warghat* , Sanj Kumar	Fruit derived callus and cell suspension culture as promising alternative sources for mogrosides production in <i>Siraitia grosvenorii</i> (Swingle) C. Jeffrey: a zero-caloric natural sweetener.	Journal of Food Composition and Analysis	108, 104450	-	2022
4.	Akhil Kumar Seema Chauhan Shiv Rattan, Ashish R. Warghat* Dinesh Kumar Bhavya Bhargava	In vitro propagation and phyto-chemical assessment of <i>Cymbidium aloifolium</i> (L.) Sw.: An orchid of pharma-horticultural importance	South African Journal of Botany	144	261-269	2022
5.	Shiv Rattan, Dinesh Kumar, Ashish Warghat*	Growth kinetics, metabolite yield, and expression analysis of biosynthetic pathway genes in friable callus cell lines of <i>Rhodiola imbricata</i> (Edgew)	Plant Cell, Tissue and Organ Culture (PCTOC)	https://doi.org/10.1007/s11240-020-02057-8	-	2021
6.	Pankaj Kumar Ashrita, Vishal Acharya Ashish Warghat*	Comparative transcriptome analysis infers bulb derived <i>in vitro</i> cultures as a promising source for sipeimine biosynthesis in <i>Fritillaria cirrhosa</i> D. Don (Liliaceae, syn. <i>Fritillaria roylei</i> Hook.) - High	Phytochemistry	183, https://doi.org/10.1016/j.phytochem.2020.112631	-	2021

		value Himalayan medicinal herb				
7.	Kanika Thakur, Archit Sood, Pawan Kumar, Dinesh Kumar, Ashish R Warghat*	Steviol glycoside accumulation and expression profiling of biosynthetic pathway genes in elicited <i>in vitro</i> cultures of <i>Stevia rebaudiana</i>	In Vitro Cellular Development Biology-Plant	57	214–224	2021
8.	Mahinder Partap, Kumar, A Kumar, Joshi, D Kumar, Ashish Warghat*	Effect of elicitors morpho-physiological performance and metabolite enrichment in <i>Valeriana jatamansi</i> cultivated under aeroponic conditions	Frontier Plant Science	doi: 10.3389/fpls.2020.01263	-	2020
9.	Mahinder Partap, P Kumar, Ashrita, Kumar, D Kumar, Ashish Warghat*	Growth kinetics, metabolite production and expression profiling of picrosides biosynthetic pathway genes in friable callus culture of <i>Picrorhiza kurroa</i> Royle Benth.	Applied Biochemistry and Biotechnology	192, https://doi.org/10.1007/s12010-020-03391-x .	1298–1317	2020
10	Shiv Rattan, Archit Sood, Pan Kumar, A Kumar, Dinesh Kumar, Ashish Warghat*	Phenylethanoids, Phenylpropanoids, and Phenolic acids quantification vis-a-vis gene expression profiling in leaf and root derived callus lines of <i>Rhodiola imbricata</i>	Industrial Crops and Products	https://doi.org/10.1016/j.indcrop.2020.112708	-	2020
11	Pankaj Kumar, Mahinder Partap, Ashrita, Divy	Metabolite and expression profiling of steroid alkaloids in wild tissue	Industrial Crops and Products	doi.org/10.1016/j.indcrop.2019.11145		2019

	Rana, Paw Kumar, Ashish Warghat*	compared to bulb derived <i>in vitro</i> cultures of <i>Fritillaria roylei</i> - high value critical endangered Himalay medicinal herb				
12	Kanika Thakur, Mahinder Parta Dinesh Kumar, Ashish Warghat*	Enhancement of picosid content in <i>Picrorhiza kurroa</i> Royle ex Ben mediated through nutritive feeding approach under aeroponic and hydroponic system.	Industrial Crops and Products	133	160-167	2019
13	Ashish R. Warghat, Prabodh K. Bajpai, Stanzin Rewang, Sahil Kapoor, Jitendra Kumar, Om P. Chaurasia and Ravi B. Srivastava	In Vitro Callus Induction and Plantlet Regeneration of <i>Saussurea lappa</i> (Clarke.) from Ladakh Region of India	Proceedings the National Academy Sciences, India Section Biological Sciences	86	651-660	2016
14	Prabodh K Bajp Ashish Warghat, Ashi Yadav, Anil Kant, Ravi Srivastava, Tseri Stobdan	High phenotypic plasticity <i>Morus alba</i> L. along local altitudinal gradient in Indian trans-Himalaya	Journal Mountain Science	12, Issue 2	446 -455	2015
15	Prabodh K. Bajp Ashish Warghat, A	Detecting molecular signatures of natural selection in <i>Morus alba</i>	Journal Systematics and Evolution	52, Issue 5	589- 597	2014

	Kant, Ravi Srivastava a Tsering Stobdan	L. populations from trans-Himalaya				
16	Prabodh K. Bajpai Ashish Warghat , Priyanka Dhar, Anil Kumar Ravi B. Srivastava and Tsering Stobdan,	Variability and fruit color effect on antioxidant activity, phenolic flavonoids, anthocyanin and proanthocyanidin content <i>Morus alba</i> L. fruit from the trans-Himalaya, India	LWT-Food Science and Technology	59	981 -988	2014
17	Ashish Warghat , Prabodh K. Bajpai, Ravi Srivastava, Om Chaurasia, Rajinder S. Chauhan and Hemant Sood	In vitro protocol for development and mass multiplication of endangered orchid <i>Dactylorhiza hatagirea</i>	Turkish Journal of Botany	38	737-746	2014
18	Prabodh K. Bajpai Ashish Warghat , Rajinder Kumar Sharma, Ashish Yadav, Anil Thakur, Ravi Srivastava and Tsering Stobdan	Structure and Genetic Diversity of Natural Populations of <i>Morus alba</i> in the Trans-Himalayan Ladakh Region	Biochemical genetics	52	137-152	2014
19	Ashish Warghat , Prabodh K. Bajpai, Ravi Srivastava, Hemant Sood and Om	Genetic structure and conservation of small fragmented populations <i>Dactylorhiza hatagirea</i> in Ladakh region of	Scientia Horticulturae	164	448-454	2013

	Chaurasia	India				
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13. Detail of patents.

S. No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status
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14. Books/Reports/Chapters/General articles etc.

S. No	Title	Authors name	Publisher	Year Publication
1.	Callus culture approach towards production of plant secondary metabolites	Shiv Rattan, Mahinder Partap, Ashrita, Kanika Pankaj Kumar, Archi Sood, Ashish Warghat*	Agricultural Biotechnology Latest Research and Trends Springer, pp 171-183, ISBN 978-981-16-2338-7.	2022
2	Hydroponic and Aeroponic Cultivation of Economical Important Crops for Production of Quality Biomass	Mahinder Partap, Shiv Rattan, Kanika, Ashrita Archi Sood, Pankaj Kumar, Ashish Warghat*	Agricultural Biotechnology Latest Research and Trends Springer, pp 573-585, ISBN 978-981-16-2338-7.	2022
3	<i>Fritillaria roylei</i> ; Himalayan Medicinal Plants	Pankaj Kumar, Ashrita Mahinder Partap and Ashish R. Warghat (2021)	Advances in Botany, Production & Research Elsevier, pp 57-60 ISBN: 9780128231517.	2021
4	<i>Valeriana jatamansi</i> , Himalayan Medicinal Plants	Pushpender Bhardwaj Shiv Rattan, Avile Naryal, Ashwini Bhardwaj and Ashish Warghat*	Advances in Botany, Production & Research Elsevier, ISBN 9780128231517, pp. 259-268.	2021

15. Any other Information (maximum 500 words)

Research focus: (High Altitude Himalayan Medicinal Plants)

- Development of plant cell and tissue culture systems for the sustainable production of secondary metabolites in Himalayan medicinal plants
- Understanding the molecular cues linked with enhanced secondary metabolites in cell culture
- Aeroponic and Hydroponic farming for metabolite enriched plant biomass production and understanding the mechanism of nutrients towards growth and development.

1. Technology has been transferred to below firms

- Amar Exports, Hyderabad-Tissue culture protocol & hydroponic cultivation of *P. kurroa* and *V. jatamansi*
- HYDROCROPS INDIA PVT LTD, Jalandhar-Cultivation and production of Kutki and Jatamansi plants under hydroponic system
- Sh. Akshat Goel, New Delhi-Establishment of hydroponic facility for production of Liliun and Tulip plants

2. Start-up has been generated

- Sanjeev Kumar (Sanjeev Kumar Nursery, Kullu)-Cultivation of High Value lower Crops (Lilium and Tulip) using Hydroponic system
- Kanik Kaushal (M/S Yuktika Biotech and Nutraceuticals Pvt. Ltd., Palampur)-Hydroponic Production of Strawberry and Cardamom
- Akash Deep Rehan (Medicinal Nursery)- Hydroponic farming of kutki and jatamansi.

Details of Projects submitted to various funding agencies

Sr. No.	Title	Cost in Lakh	Month of submission	Role as PI/CO-PI	Agency	Status
1	Understanding the role of endophytes in the adaptation of <i>Picrorhiza kurroa</i> Royle ex Benth under extreme	100.54	24-02-2022	CO-PI	SERB, India	Submitted

	environment					
2	Design and development of IoT enabled automated smart hydroponic system and quality assessment of the produce	214.48	04-02-2022	PI	CSIR, India	Submitted
3	Smart data analytics for maximizing crop yield under vertical farming system through artificial intelligence (AI)	98.10	12-02-2022	PI	CSIR, India	Submitted

Details of Projects under implementation:

Sr. No.	Title	Cost in Lakh	Month of submission	Role as PI/CO-PI	Agency	Status
1	Development of Probiotics for Plant Tissue Culture Boosting the performance of micro propagated plant materials by supplementing plant associated useful endophytes	48.38	20/01/2021-19/01/2024	CO-PI	NMPB, India	Ongoing
2	Endophytes of Valeriana jatamansi and Podophyllum hexandrum under Endophytes Network Project entitled “Deciphering the mechanism(s) of host-endophytes’ coevaluation, enhanced secondary metabolite production and crop productivity”(FBR)	68.12	22-07-2020-31-03-2023	CO-PI	CSIR, India	Ongoing
3	Cultivation and Production of Kutki and Jatamansi plant under hydroponic system	3.78	17-03-2021-16-03-2026	PI	Sponsored	Ongoing

4	Establishment of hydroponic facility for production of Liliun and Tulip plants	3.28	01-03-2021-28-02-2026	PI	Sponsored	Ongoing
5	Cultivation and production of medicinal plants (Picrorhiza, Valeriana) under hydroponic system, tissue culture protocols and extraction of the produce	4.20	02-07-2021-01-07-2026	PI	Sponsored	Ongoing

Details of Projects completed during the last 5 years:

Sr. No.	Title	Cost in Lakh	Month of submission	Role as PI/CO-PI	Agency	Status
1	Phytopharmaceutical mission	81	08 Dec, 2017 - 31 Dec, 2020	PI	CSIR, India	Completed
2	Optimization of aeroponic and hydroponic conditions for increasing commercial crop productivity	150	22 Feb, 2019 - 21 Feb, 2020	CO-PI	CSIR, India	Completed
3	Advanced diploma program in Plant Tissue Culture	52	22 Feb, 2018 - 21 Feb, 2021	PI	DBT, India	Completed
4	Ex-situ conservation and development of gene bank of commercially important threatened medicinal plants in the high altitude areas, Himachal Pradesh	70	12 Dec, 2018 - 11 Dec, 2021	PI	NMHS, India	Completed