

Atul Grover, Ph.D.

Scientist 'D' and Technical Staff Officer (TSO) to Director,
 Coordinator, DRDO Army Bio Diesel Programme,
 Defence Institute of Bio-Energy Research (DIBER),
 Defence Research and Development Organization (DRDO),
 Goraparao, P.O. Arjunpur, Haldwani 263139



- Associate Editor, Physiology and Molecular Biology of Plants (Springer)
- On Panel of reviewers to various journals, most notably 'Frontiers in Plant Science', 'Scientific Reports', 'BMC Research Notes', 'Protoplasma', 'Biotechnology Reports', 'Biotechnology Journal', 'Journal of Biochemistry and Biotechnology', 'Plant Signaling and Behaviour', 'Industrial Crops and Products', 'The Plant Genome', 'Tree Genetics and Genomes', and 'Physiology and Molecular Biology of Plants'.
- On Panel of Experts of Department of Microbiology and Department of Molecular Biology and Genetic Engineering, **GB Pant University of Agriculture and Technology**, Pantnagar; Department of Bioscience and Biotechnology, **Banasthali University**, Banasthali; *Department of Biotechnology, Graphic Era University, Dehradun*; Department of Biochemical Engineering, **BC Tripathi Kumaon Engineering College**, Dwarahat; **Aryaman Vikram Birla Institute of Learning**, Haldwani, etc.

AWARDS, RECOGNITION AND HONOURS

2016	Laboratory Technology Group of the Year (2015)
2016	BioVed Honourary Fellowship Award (2015)
2015	<u>Second prize</u> for technical presentation (Oral) in 17 th Indian Agricultural Scientist and Farmers' Congress on "Agri-innovation for enhancing production and rural employment" (Feb. 21-22) at BioVed Research Institute for Agricultural Technology (BRIAT), Allahabad.
2015	Laboratory Scientist of the Year (2014)
2013	Appreciation Certificate for Presentation at Brig. S.K. Mazumdar Memorial Young Scientist Award Competition
2011	<u>Delivered National Technology Day lecture</u> at Defence Institute Bio-Energy Research (DIBER), Haldwani
2008	Awarded and availed <u>Indraprastha Post Doctorate Fellowship</u> from Guru Gobind Singh Indraprastha University, Delhi. Awarded and availed <u>financial assistance by DST to attend XX International Congress of Genetics 2008</u> , Berlin
2007	Awarded <u>CR and Bhargavi Rao Prize</u> for best poster presentation during BioConvene2007-International Conference on Bioinformatics and Drug Discovery. Dec. 20-22. Recommended for the award of <u>DST Fasttrack Young Scientist project</u> for three years.

Professional Memberships

Type of Membership (Member, Life member, Fellow etc.)	Institution	National /International
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Member	International Postgraduate Network, Kuala Lumpur, Malaysia	International
Life member	Indian Science Congress Association (ISCA), Kolkatta, India	National
Life member	Prof. H.S. Srivastava Foundation for Science and Society (HFSS), Lucknow, India	National
Member	International Society for GM Crops (ISGMC), Cairo, Egypt	International
Former Member (2012-13)	Society of Plant Signaling and Behaviour, USA	International
Former Member (2003-04)	Indian Potato Association, Shimla, India	National
Former Member (2001-02)	Society of Genetics and Plant Breeding, New Delhi, India	National

PUBLICATIONS

Articles submitted

1. **Grover A**, Singh S, Bhatt BB, Katara P, Nasim M (2016) Identification of low temperature responsive genes in *Lepidium latifolium* using cross species hybridization to *Arabidopsis thaliana*. *Interdiscip. Sci. Comput. Life Sci.* (Springer).
2. Singh S, Khalid H, **Grover A**, Singh A, Nasim M (2016) Altered behaviour of tobacco plants over-expressing *NAC* gene of *Lepidium latifolium* (*LlaNAC*). *Frontiers Plant Sci.*, Switzerland (Frontiers Media).
First three authors contributed equally
3. Patade VY, Meena HS, **Grover A**, Anukriti, Gupta SM, Nasim M (2016) Enhanced cold tolerance in tomato through overexpression of *Nicotiana tabacum Osmotin (NtOsm)*: Toxicity analysis and molecular insights. *Mol. Biol. Rep.* Netherlands (Springer).
4. Khalid H, Kumari M. **Grover A**, Nasim M (2016) Isolation, screening, characterization and optimization of cellulose production of cellulytic bacteria from farm yard manure. *Ind. J. Exp. Biol.* India (Nisclair).

Peer reviewed articles

5. Badoni P, Kumari M, Patade VY, **Grover A** and Nasim M (2016) Biochemical and physiological analysis of zinc tolerance in *Jatropha curcas*. *J. Ex. Biol. Agric. Sci.*, India (Horizon Publisher) 4:7-15.
Open access article
6. Singh S, **Grover A** and Nasim M (2016) Biofuel potential of plants transformed genetically with *NAC* family genes. *Frontiers Plant Sci.*, Switzerland (Frontiers Media) 7:22.
Impact factor- 4.495; Cites/Doc (Scimago): 4.560; Open access article; First two authors contributed equally
7. **Grover A** and Sharma PC (2016) Development and use of molecular markers: past and present. *Crit. Rev. Biotechnol.*, UK (Informa Healthcare) 66:290-302.
Impact factor- 7.510; Cites/Doc (Scimago): 5.118; Citations- 7
8. Khalid H, Kumari M, **Grover A** and Nasim M (2015) Salinity stress tolerance of *Camelina* exhibited *in vitro*. *Scientia Agriculturae Bohemica*, Czech Republic (Czech University of Life Sciences) 46:137-144.

Cites/Doc (Scimago): 0.507

9. **Grover A**, Singh S, Pandey P, Patade VY, Gupta SM, Yadav A, Jadon A, Bhatt H, Prakash O, Bhatt BB and Nasim M (2015) Efficient tissue culture independent *Agrobacterium* mediated genetic transformation protocols for *Solanum lycopersicum*. *Plant Cell Biotechnol. Mol. Biol.*, India (ScienceDomain International) 16:20-28.
Citation-1; First five authors contributed equally
10. **Grover A**, Singh S, Pandey P, Patade VY, Gupta SM and Nasim M (2014) Overexpression of *NAC* gene from *Lepidium latifolium* enhances biomass, shortens life cycle and induces cold stress tolerance in tobacco: potential for engineering fourth generation biofuel crops. *Mol. Biol. Rep.*, Netherlands (Springer) 11:7479-7489.
Impact factor- 1.698; Cites/Doc (Scimago): 1.716; Citations- 4; First two authors contributed equally
11. Sinha VB, **Grover A**, Singh S, Pande V and Ahmed Z (2014) Overexpression of *Ran* gene from *Lepidium latifolium* L. (*LlaRan*) renders transgenic tobacco plants hypersensitive to cold stress. *Mol. Biol. Rep.*, Netherlands (Springer) 41:5989-5996.
Impact factor- 1.698; Cites/Doc (Scimago): 1.716; First two authors contributed equally; Citations- 2
12. Sinha VB, **Grover A**, Aslam M, Ahmed Z and Pande V (2014) Isolation and characterization of Ras related GTP binding protein (Ran) from *Lepidium latifolium* L. reveals its potential role in regulating abiotic stress tolerance. *Acta Physiol Plant*, Poland (Springer) 36:2353-2360.
Impact factor- 1.563; Cites/Doc (Scimago): 1.589; Citation-2
13. Sinha VB, **Grover A**, Ahmed Z and Pande V (2014) Isolation and functional characterization of DNA damage repair protein (DRT) from *Lepidium latifolium* L. *CR Biol.*, France (Elsevier) 337:302-310.
Impact factor- 1.064; Cites/Doc (Scimago): 1.136; Citations-3
14. Patade VY, Khatri D, Kumar K, **Grover A**, Kumari M, Gupta SM, Kumar D and Nasim M (2014) RNAi Mediated Curcumin Precursor Gene Silencing in *Jatropha* (*Jatropha curcas* L.). *Mol. Biol. Rep.*, Netherlands (Springer) 41:4305-4312.
Impact factor- 1.698; Cites/Doc (Scimago): 1.716; Citation-4
15. Patade VY, Khatri D, **Grover A**, Kumari M, Gupta SM and Ahmed Z (2014) Silenced phytoene desaturase gene as a scorable marker for plant genetic transformation. *Biotechnol.*, Pakistan (Asian Network of Scientific Information) 13:80-84.
Cites/Doc (Scimago): 0.308
16. Patade VY, Khatri D, Kumari M, **Grover A**, Gupta SM, Damke S and Ahmed Z (2014) Simple, efficient and high-throughput method for transgenic confirmation. *Natl Acad. Sci. Lett.*, India (Springer) 37:87-90.
Impact factor- 0.345; Cites/Doc (Scimago): 0.503
17. **Grover A**, Kumari M, Singh S, Rathore SS, Gupta SM, Pandey P, Gilotra S, Kumar D, Arif M and Ahmed Z (2014) Analysis of *Jatropha curcas* transcriptome for oil enhancement and genetic markers. *Physiol. Mol. Biol. Plants*, India (Springer) 20:139-142.
Impact factor- 1.351; Cites/Doc (Scimago): 1.45; Citations- 3

18. Kumari M, **Grover A**, Patade VY, Arif M and Ahmed Z (2013) Development of EST-SSR markers through data mining and their use for genetic diversity study in Indian accessions of *Jatropha curcas* L.: a potential energy crop. *Genes & Genomics*, Germany (Springer) 35:661-670.
Impact factor- 0.692; Cites/Doc (Scimago): 0.628; Citations- 3
19. Gupta SM, **Grover A**, Nasim M (2013) Transgenic technologies in agriculture: From lab to field to market. *CIBTech J. Biotechnol.*, India (CIBTech) 3:20-47.
Open access article; Mentioned in International Service for the Acquisition of Agri-biotech Applications (ISAAA) newsletter 'Crop Update', Nov. 06, 2013 issue; Citations- 5
20. Gupta SM, Singh S, Pandey P, **Grover A** and Ahmed Z (2013) Semi-quantitative analysis of transcript accumulation in response to drought stress by *Lepidium latifolium* seedlings. *Plant Signal. Behav.*, USA (Landes Bioscience) 8:e25388.
Cites/Doc (Scimago): 1.100; Citation- 1; All authors contributed equally to the manuscript
21. Gupta SM, Pandey P, **Grover A**, Patade VY, Singh S and Ahmed Z (2013) Cloning and characterization of *GPAT* gene from *Lepidium latifolium*: a step towards translational research in agri-genomics for food and fuel. *Mol. Biol. Rep.*, Netherlands (Springer) 40:4235-4240.
Impact factor- 1.698; Cites/Doc (Scimago): 1.716; Citations- 5
22. Patade VY, Khatri D, Kumari M, **Grover A**, Gupta SM and Ahmed Z (2013) Cold tolerance in *Osmotin* transgenic tomato (*Solanum lycopersicum* L.) is associated with modulation in transcript abundance of stress responsive genes. *SpringerPlus* (Springer) 2:117.
Impact factor- 0.982; Cites/Doc (Scimago): 0.967; Open access article; citation- 14
23. Gupta SM, Pandey P, Negi PS, Pande V, **Grover A**, Patade VY and Ahmed Z (2013) DRE-binding transcription factor gene (LlaDREB1b) is regulated by various abiotic stresses in *Lepidium latifolium* L. *Mol. Biol. Rep.*, Netherlands (Springer) 40:2573-2580.
Impact factor- 1.698; Cites/Doc (Scimago): 1.716; citations-11
24. Katara P, **Grover A** and Sharma V (2012) *In silico* prediction of drug targets in phytopathogenic *Pseudomonas syringae* pv. phaseolicola: charting a course for agrigenomics translation research. *Omics* (Mary Ann Liebert Inc.) 16:700-706.
Impact factor-2.896; Cites/Doc (Scimago): 2.809; Citation- 2
25. **Grover A**, Gupta SM, Pandey P, Singh S and Ahmed Z (2012) Random genomic scans at microsatellite loci for genetic diversity estimation in cold adapted *Lepidium latifolium*. *Plant Genetic Resour.: Characterization & Utilization*, UK (Cambridge University Press) 10:224-231.
Impact factor-0.442; Cites/Doc (Scimago): 0.387; Citations-3
26. Gupta SM, **Grover A**, Pandey P and Ahmed Z (2012) Female plants of *Hippophae salicifolia* D. Don are more responsive to cold stress than male plants. *Physiol. Mol. Biol. Plants*, India (Springer) 18:377-380.
Impact factor- 1.351; Cites/Doc (Scimago): 1.45; citations- 6
27. Katara P, **Grover A** and Sharma V (2012) Phylogenetic footprinting: a boost for microbial regulatory genomics. *Protoplasma*, Austria (Springer) 289:901-907.
Impact factor- 2.343; Cites/Doc (Scimago): 2.195; Citations- 2

28. Sharma PC, **Grover A** and Roorkiwal M (2012) Purifying selection bias against microsatellites in gene rich segmental duplications in the rice genome. *Int. J. Evol. Biol.* (Hindawi) Article ID 970920.
Open access article; Invited for Special Issue "Molecular Evolutionary Routes that Lead to Innovations" (Aug. 2012); citation- 1
29. Gupta SM, **Grover A** and Ahmed Z (2012) Identification of abiotic stress responsive genes from Indian high altitude *Lepidium latifolium* L. *Defence Sci. J.*, India (DRDO) **62**:315-318.
Impact factor-0.292; Cites/Doc (Scimago): 0.500; Citations- 5
30. Aslam M, **Grover A**, Sinha VB, Fakher B, Pande V, Patade VY, Gupta SM, Anandhan S and Ahmed Z (2012) Isolation and characterization of cold responsive NAC gene from *Lepidium latifolium*. *Mol. Biol. Rep.*, Netherlands (Springer) **39**:9629-9638.
Impact factor- 1.698; Cites/Doc (Scimago): 1.716; citations- 18
31. **Grover A** and Sharma PC (2012) Tandem repetitions in transcriptomes of some Solanaceae species. *Am. J. Mol. Biol.* (Scientific Research) **2**:140-152.
Cites/Doc (Google): 0.560; Open access article; Citation- 2
32. **Grover A**, Aishwarya V and Sharma PC (2012) Searching microsatellites in DNA sequences: Approaches used and tools developed. *Physiol. Mol. Biol. Plants*, India (Springer) **18**:11-19.
Impact factor- 1.351; Cites/Doc (Scimago): 1.45; Citations- 13
33. Katara P, **Grover A**, Kuntal H and Sharma V (2011) *In silico* prediction of drug targets in *Vibrio cholerae*. *Protoplasma*, Austria (Springer) **248**:799-804.
Impact factor- 2.343; Cites/Doc (Scimago): 2.195; First two authors contributed equally to the manuscript. Citations-7
34. Gupta SM, Pandey P, **Grover A** and Ahmed Z (2011) Breaking seed dormancy in *Hippophae salicifolia*, a high value medicinal plant. *Physiol. Mol. Biol. Plants*, India (Springer) **17**:403-406.
Impact factor- 1.351; Cites/Doc (Scimago): 1.45; citation- 8
35. **Grover A** and Sharma PC (2011) Is spatial occurrence of microsatellites in genome a determinant of their function and dynamics contributing to genome evolution? *Curr. Sci.*, India (Indian Academy of Science) **100**:859-869.
Impact factor- 0.833; Cites/Doc (Scimago): 1.091; Citations- 20
36. Jain A, Ghangal R, **Grover A**, Raghuvanshi S and Sharma PC (2010) Development of new EST based SSR markers in seabuckthorn. *Physiol. Mol. Biol. Plants*, India (Springer) **16**:375-378
Impact factor- 1.351; Cites/Doc (Scimago): 1.45; Citations- 21
37. **Grover A**, Ramesh B and Sharma PC (2009) Development of microsatellite markers in potato and their transferability in some members of solanaceae. *Physiol. Mol. Biol. Plants*, India (Springer) **15**:343-358
Impact factor- 1.351; Cites/Doc (Scimago): 1.45; citations- 15
38. Roorkiwal M, **Grover A** and Sharma PC (2009) Genome-wide analysis of conservation and divergence of microsatellites in rice. *Mol. Genet. Genomics*, UK (Springer) **282**:205-215
Impact factor- 2.622; Cites/Doc (Scimago): 2.045; citations- 11
39. Agarwal SM and **Grover A** (2008) Nucleotide composition and amino acid usage in AT-rich hyperthermophilic species. *The Open Bioinformatics J.* (Bentham Open) **2**:11-19

Open access article; citations- 6

40. Sharma PC, **Grover A** and Kahl G (2007) Mining microsatellites in eukaryotic genomes. *Trends Biotechnol.*, UK (Elsevier) **25**:490-498
Impact factor- 11.958; Cites/Doc (Scimago): 12.827; Cited at the cover page of the journal; citations- 155
41. Aishwarya V, **Grover A** and Sharma PC (2007) EuMicroSatdb: A database for microsatellites in the sequenced genomes of eukaryotes. *BMC Genomics*, UK (Biomed Central) **8**:225
Impact factor- 3.867; Cites/Doc (Scimago): 4.056; Highly accessed article; Open access article; citations- 27
42. **Grover A** and Sharma PC (2007) Microsatellite motifs with moderate GC content are clustered around genes on *Arabidopsis thaliana* chromosome 2. *In Silico Biol.*, Netherlands (The Bioinformatics Systems) **7**:201-213.
Open access article; citations- 15
43. **Grover A**, Aishwarya V and Sharma PC (2007) Biased distribution of microsatellite motifs in the rice genome. *Mol. Genet. Genomics*, UK (Springer) **277**:469-480
Impact factor- 2.622; Cites/Doc (Scimago): 2.045; citations- 56
44. Garbyal SS, **Grover A**, Aggarwal KK and Babu CR (2007) Traditional phytomedicinal knowledge of *Bhotias* of Dharchula in Pitthoragarh. *Ind. J. Traditional Knowledge*, India (CSIR) **6**: 360-364
Impact factor- 0.411; Cites/Doc (Scimago): 0.492
45. Agarwal SM, Jain M and **Grover A** (2005) Genomic distribution of genes encoding 68 ribosomal proteins in rice. *Acta Physiol Plant*, Poland (Springer) **27**:439-446
Impact factor- 1.563; Cites/Doc (Scimago): 1.589; Equal contribution by all the authors; Citation- 1
46. **Grover A** and Sharma PC (2004) Occurrence of simple sequence repeats in potato ESTs is not random: An *in silico* study on distribution and length of simple sequence repeats. *Potato J.*, India (Indian Potato Association) **34**:95-102.
Cites/Doc (Scimago): 0.649; Citations- 6

Paper published in conference proceedings

47. Sharma PC and **Grover A** (2004) Bioinformatics: An overview. In: Proc. 35th Mid-term Symposium on "Bioinformatics: Applications and Emerging Technologies", IETE, Nagpur, Apr. 3-4. pp 33-36.

Book chapters

48. **Grover A**, Patade VY, Kumari M, Gupta SM, Arif M and Ahmed Z (2014) Bioenergy crops enter into the omics era. In: Omics applications in crop science. CRC Press, Taylor & Francis LLC, Abingdon, USA, pp 549-561.
49. **Grover A**, Patade VY, Kumari M, Gupta SM, Arif M and Ahmed Z (2013) Omics approaches in biofuel production for Green Environment. In: Barh D, Zambare V and Azevedo V (eds) Omics: Applications in Biomedical, Agricultural and Environmental applications. CRC Press, Taylor & Francis, LLC, USA. ISBN:9781466562813. pp 623-636.
Citations- 2

50. **Grover A**, Jain A and Sharma PC (2010) Microsatellite markers: potential and opportunities in medicinal plants. *In*: Arora R (Ed.) Medicinal Plant Biotechnology. CAB International, Oxon, United Kingdom. pp 71-92

Citation- 3

Technical Documents

51. DRDO Army Biofuel Programme (2010)
52. DRDO Army Biofuel Programme (2012)
53. **DRDO GM qPCR Detect Kit** (2012) Product catalog released by Defence Institute of Bio-Energy Research, Haldwani
54. **Biosafety Manual** (2012) Defence Institute of Bio-Energy Research, Haldwani
55. **Databases for microsatellites** (2007) Product catalog released by Guru Gobind Singh Indraprastha University

PATENT: Oligonucleotide primers and probe for a rapid, reliable and sensitive real time PCR based detection of transgenic plants (Published; **1632/DEL/2013**; Dec. 19, 2014)