HITESH N. PAWAR

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EDUCATIONAL CREDENTIALS

Ph.D. in Animal Biotechnology with Veterinary Microbiology as minor subject from GADVASU, Ludhiana (Punjab), India 2012 — OGPA **7.75/10**

M.V.Sc. (MS) in Animal Genetics & Breeding with Veterinary Biochemistry as minor subject from College of Veterinary Sciences, GADVASU Ludhiana (Punjab), India 2009 — OGPA **7.57/10**

B.V.Sc. (DVM) from Bombay Veterinary College, Mumbai, India 2007 — OGPA **6.99/10**

Secured **67th rank** in National entrance test (ICAR JRF) for postgraduate studies conducted by Indian Council of Agriculture Research (2007)

AWARDS ACHIEVED

- Best Poster Presentation Award (1st position) for 'Cloning, sequencing and phylogenetic analysis of heat shock protein 70 (HSP70) gene from ruminant species' at the National symposium on "Effective utilization of translational research platforms for animal biotechnology" held at Sardarkrishinagar, Gujarat (12-14 Dec., 2011)
- Contributing author for ISVIB Scientist Award-2013 of 'Comparative evaluation of real time PCR assay with conventional parasitological techniques for diagnosis of Trypanosoma evansi in cattle and buffaloes' for the year 2013 at Indian Society for Veterinary Immunology and Biotechnology conference at Palampur.
- Contributing author for Young Scientist Award of 'Eukaryotic expression and characterization of BHV-1 Glycoprotein D (GD) as a potential diagnostic agent' for the year 2011 at 18th Annual Convention of Indian Society for Veterinary Immunology and Biotechnology (ISVIB) held at Sardarkrishinagar, Gujarat (12-14 Dec., 2011).
- Best Poster Presentation Award (3nd position) in the session "Environmental health and wildlife issues" for the research paper entitled 'Expression and purification of cytolethal destending toxin B (cdtB) from Salmonella entertica serovar Typhi' in the International symposium on "One health: way forward to challenges in food safety and zoonoses in 21st century and XIth annual conference of IAVPHS" held at GADVASU, Ludhiana (Dec 13-14, 2012).
- Best Poster Presentation Award (2nd position) in the session "Zoonoses and transboundary diseases" for the research paper entitled 'Molecular cloning, expression and immunological characterization of outer membrane protein F, I and L from Pseudomonas aeurogenosa' in the International symposium on "One health: way forward to challenges in food safety and zoonoses in 21st century and XIth annual conference of IAVPHS" held at GADVASU, Ludhiana (Dec 13-14, 2012).

RESEARCH EXPERIENCE

- Currently working as **Postdoctoral Research Fellow** at Department of Diagnostic and Biomedical Sciences at **University of Texas Health Science Center at Houston, Texas** from June 2018 – Till date under NIH funded project "Is immune system TSH-beta splice variant a causative factor in autoimmune thyroiditis?"
  - Current research focused on understanding the involvement of a novel immune system derived splice variant of thyroid stimulating hormone in the development and perpetuation of autoimmune thyroiditis using gene targeted knockdown systems.
  - To achieve above research my job is to establish and screen CRISPR mouse model for TSH beta variant gene and maintaining breeding stock to get homozygous colonies.
  - Similarly also working on, identification of role of TSH beta gene associated transcription factors, enhancers and suppressers in gene splicing and its functional role in development of autoimmune diseases.

- Worked as **Postdoctoral Associate** in Department of Biological Sciences, **University of Texas at El Paso (El Paso, TX)** from December 2015 – May 2018 under NIH funded project "Sympathetic Neuronal Regulation and Aging: Medullary mechanisms and strategies".
  - I was working on genomic and proteomic profiling of neurotransmitter receptors and neuroinflammatory molecules within RVLM area of the brainstem and how these molecular substrates affect visceral sympathetic outflow with advanced age and acute physical stress using F344 rats as a model. We have published 4 scientific manuscripts in during my tenure.
  - Job responsibilities included use of molecular techniques like Microarray, real-time qPCR, superarrays, ELISA, immunoblotting and immunohistochemistry to screen the RVLM, a brainstem area for genes involved in regulation of biological processes of neurotransmitter biosynthesis, uptake, transport and signaling that alter sympathetic nervous regulation.
  - Also I was actively involved in statistical analysis, data presentation in conferences, manuscript writing, lab maintenance, record keeping, and purchasing.

- Worked as **Postdoctoral Fellow** in Department of Anatomy and Physiology, at **Kansas State University (Manhattan, KS)** form October 2014 – December 2015 under same (as above) project
  - Job responsibilities included lab animal handling, brain tissue collection, RNA or Protein extraction, gene expression analysis using real-time qPCR, and protein by ELISA and immunoblotting. Lab maintenance, purchasing of supplies, data analysis, and manuscript writing.

- Worked as **Scientist** in Vidya Pratishthan's School of Biotechnology (VSBT) at Baramati, Pune (India) from October 2012 – May 2014.
  - Job responsibilities included use of molecular tests like, PCR and ELISA to identify tick born infections using host blood, tick salivary gland and tick DNA isolation; characterization of tick salivary gland proteins using SDS PAGE. Management and took care of research activities at VSBT's cow farm. Also handled following projects at VSBT;
  - Animal Disease Surveillance under the project "Biovillage" sponsored by Govt. of India from October 2012- May 2014. Duties included surveillance of animal diseases, passively by using data collection and actively by screening of animal samples using molecular techniques.
  - "Johne's Disease, Bluetongue and Foot and mouth disease (FMD) vaccine field trials" in Baramati area, Dist Pune, MH (India) in collaboration with Biovet, Pvt Ltd. Bangalore and Vidya Pratishthan's School of Biotechnology, Baramati, Dist. Pune (India) from Sept 2013- Jan 2014.

- Research experience of two and a half years during **Ph.D. research** on "Studies on Molecular and Immunological Characterization of Heat Shock Protein 70 (HSP70) in Buffaloes". Which dealt with DNA isolation, PCR amplification, gene cloning, and sequence analysis, prokaryotic expression, production of recombinant HSP70, Purification by affinity chromatography, mice inoculation of antigen, dot and western blotting for testing of immunological properties. In parallel isolation of lymphocytes, *in vitro* Heat Shock, RNA isolation, real time PCR analysis of HSP 70 and inflammatory cytokine.
- Research Experience of one year during **M.V.Sc. (Master's) research** on "Studies on Effect of Temperature and Humidity on Milk Production Traits and Expression profiling of Heat Shock Protein 70 (HSP70) and Heat Shock Transcription Factor 1 (HSF1) in Graded Murrah Buffaloes" specifically dealing with the data collection from buffalo farm, statistical analysis, data presentation to find out effect of temperature on milk production traits. In parallel molecular studies for gene expression analysis through RNA isolation from healthy buffaloes, cDNA synthesis, real-time PCR and data analysis.
- Worked as **Project Fellow** in University Grant Commission, India funded project on "Bacteriophage Therapy against suppurative infections" at School of Animal Biotechnology, GADVASU, Ludhiana (India) for a period of 7 months (March to Sept 2012).
- Worked as **Research Associate** in Department of Biotechnology Govt. of India (DBT) funded project on "Molecular characterization of TLR's in Indian major carp fishes" at School of Animal Biotechnology, GADVASU, Ludhiana (India) for a period of 3 months (Nov 2009 to Jan 2010).

TEACHING EXPERIENCE

In addition to research at Vidya Pratishthan's School of Biotechnology, Baramati, Maharashtra (India) from Oct 2012 – May 2014, also had teaching job responsibilities:

- Teaching undergraduates program of Bachelors of Agricultural Biotechnology and postgraduates program of Biotechnology.
- Undertaking theory and practical classes for undergraduate and postgraduate students of Molecular Immunology and Animal Virology, Animal Cell Culture and Animal Genetic Engineering.
- Mentor and co-mentor for students research projects of B.Sc. Agricultural Biotechnology (4 students) for graduate research projects (5 students) related to Animal Biotechnology.

SKILLS

- DNA/RNA/Plasmid Isolation
- Polymerase Chain Reaction (Real Time PCR), RFLP.
- SDS-PAGE, Western blotting, ELISA
- Gene Cloning and expression (both Prokaryotic and Eukaryotic system)
- 2D Electrophoresis and Protein purification
- Cell/Tissue culture: Primary cell culture, Maintenance of cell lines, Cryopreservation, Transfection, Production of Monoclonal antibodies
- Lab animal breeding and genotyping
- Flow cytometry

COMPUTER APPLICATION

- Statistical Software Packages: SPSS 16.0, SigmaPlot 11.0

- Molecular Biology software's: MEGA 4.1, DNAStar, Gene tool, Primer3, ClustalW, Sequence Detection Software.

RESEARCH PUBLICATIONS

1. Does Acute Heat Stress Differentially-Modulate RVLM Gene Expression of Ionotropic Neurotransmitter Receptors in Young and Aged F344 Rats? **Hitesh N. Pawar*,** Sivasai Balivada, Michael J. Kenney. *Neuroscience letters 687: 223-233* (2018)
2. Microarray analysis of aging-associated immune system alterations in the Rostral Ventral Lateral Medulla of F344 rats. Sivasai Balivada*, Chanran Ganta, Yongqing Zhang, **Hitesh N. Pawar**, Kevin G. Becker, Michael J. Kenney. *Physiological Genomics 49(8): 400-415,* (2017)
3. Does Aging Alter the Ionotropic Neurotransmitter Receptor Genomic Profile of the Rostral Ventral Lateral Medulla? – A Short Communication. **Hitesh N. Pawar***, Sivasai Balivada, Michael J. Kenney. *Experimental Gerontology 91: 99-103* (2017)
4. Effect of Ghrelin on Regulation of Splenic Sympathetic Nerve Discharge. Sivasai Balivada, **Hitesh N. Pawar***, Shawnee Montgomery, Michael J. Kenney. *Autonomic Neuroscience: Basic and Clinical 201: 68-71* (2016)
   (# The first two authors contributed equally to this work)
5. Differential expression of apoptosis-associated genes in canine mammary tumors. Namita Mitra*, Ramneek Verma, Dipak Deka, **Hitesh N. Pawar**, Naresh K. Sood, Kuldeep Gupta, Shashi K. Mahajan, Jitender Mohindroo. *Biologia* 70(6): 846-852 (2015)
6. Heat and cold stress enhances the expression of Heat Shock Protein 70, Heat shock Transcription factor 1 and Cytokines (IL12, TNFα and GMCSF) in Buffaloes. **Hitesh N. Pawar***, GVPPS Ravi Kumar, Raman Narang, Ravi Kant Agrawal. *International Journal of Current Microbiology and Applied Sciences* 3(2): 307-317 (2014)
7. In silico analysis of Stress Inducible 70 kDa Heat Shock Protein of Bubalus bubalis. **Hitesh N. Pawar***, G.S.Brah, Ramneek, Ravi Kant Agrawal. *International Journal of Advanced Research.* 2(2):1480-1494. (2014)
8. Cloning, sequence analysis and structure prediction of B cell Lymphoma-2 of Canis familiaris. Namita Mitra, Ramneek Verma, **Hitesh N. Pawar**, D. Deka, R.K. Agrawal, A. Singh. *Int. J. Curr. Microbiol. App. Sci* 3(6)370-382 (2014)
9. Development of Duplex PCR Based on clyA, hisJ and invA Genes for Concurrent Diagnosis and Differentiation of Salmonella Serovars. Urvashi Mothwal, Ravi Kant Agrawal*, **Hitesh N. Pawar**, Daljit Kaur, Dipak Deka, Ramneek. *Journal of Microbiol. Immunol. & Biotechnol*. 1: 18-24. (2014)
10. Molecular and Immunological characterization of Heat Shock Protein 70 from buffaloes. **Hitesh N. Pawar**, Ravi Kant Agrawal, G.S.Brah, Ramneek. *Proceedings of National Academy of Science, India section B, Biological Sciences* 83(2): 163-169. (2013)
11. Expression, purification and characterization of recombinant heat shock protein 70 (HSP70) from Sheep and Goat Species. **Hitesh N. Pawar**, Ravi Kant Agrawal, Ramneek, G.S.Brah. *International Journal of Current Microbiology and Applied Sciences* 2(11):440-452. (2013)
12. Over-Expression, Purification and Immunological Characterization of Outer Membrane Protein F (Oprf) from Pseudomonas aeruginosa. Kanika Mahajan, Ravi Kant Agrawal, **Hitesh N. Pawar**,

Daljit Kaur, Gagandeep Kaur, Naveen Saini, Janak Dhakal, Urvashi Mothwal, Priyanka Minhas, Dipak Deka, Ramneek, *Indian Veterinary Journal*, 90 (10): 59-61. (2013)

13. Over-expression of gene encoding heat shock protein 70 (Hsp70) from Mycobacterium tuberculosis and its evaluation as vaccine adjuvant. Janak Dhakal, G.S.Brah, **Hitesh N. Pawar**, Ramneek, Dipak Deka, Ravi Kant Agrawal. *Indian Journal of Medical Microbiology* 31(2):123-129. (2013)
14. Effect of heat stress on milk production and composition in Murrah buffaloes. **Hitesh N. Pawar**, G.V.P.P.S. Ravi Kumar, Raman Narang. *Journal of Buffalo Science*. 2: 98-102. (2013)
15. Development and evaluation of PCR assay based Outer Membrane Protein 22 gene for genus specific diagnosis of Brucella Spp. Priyanka Minhas, Ramneek, **Hitesh N. Pawar**, Daljit Kaur, Dipak Deka, Ravikant Agrawal. *Proceedings of National Academy of Science, India section B, Biological Sciences.* 83(4), 615-619. (2013)
16. Development and evaluation of PCR assay based on lipL32 gene for rapid diagnosis of pathogenic leptospires. Daljit Kaur, Ravi Kant Agrawal, **Hitesh N. Pawar**, Dipak Deka, Ramneek. *Indian Veterinary Journa*l 90:9-12. (2013)
17. Molecular Cloning, Expression and Immunological Characterization of Gene Encoding Outer Membrane Protein L1 (OmpL1) From Leptospira Interrogans Serovar Hardjo. Naveen Saini, Ravi Kant Agrawal, **Hitesh N. Pawar**, Janak Dhakal, Daljit Kaur, Dipak Deka, Ramneek. *Indian Veterinary Journal* 90(8): 24-27. (2013)
18. Cloning, sequencing and expression of gene encoding pore forming cytotoxic protein cytolysin A (Cly A) from Salmonella Typhi. Urvashi Mothwal, Ravi Kant Agrawal, **Hitesh N. Pawar**, Daljit Kaur, Kanika Mahajan, Dipak Deka, Ramneek. *Indian Veterinary Journal* 90:13-16. (2013)
19. Expression and Purification of 32kDa immuno-dominant outer membrane protein (LipL32) from Leptospira interrogans serovar Canicola. Daljit Kaur, Ravi Kant Agrawal, **Hitesh N. Pawar**, Dipak Deka, Ramneek. *Indian Veterinary Journal* 90: 116-119. (2013)
20. Molecular Cloning and Expressin of Cytolethal Distending Toxin B (CdtB) from Sal-monella Typhi. Ravi Kant Agrawal, **Hitesh N. Pawar**, Daljit Kaur, Janak Dhakal, Naveen Saini, Urvashi Mothwal,Priyanka Minhas, Kanika Mahajan, Dipak Deka, Ramneek. *Indian Veterinary Journal* 90(9): 73-76. (2013)
21. Molecular Cloning, Expression and Immunological Characterization of Gene Encoding 22kda Outer Membrane Protein (Omp22) From Brucella Abortus. Priyanka Minhas, Ramneek, **Hitesh N. Pawar**, Daljit Kaur, Gagandeep Kaur, Kanika Mahajan, Janak Dhakal, Naveen Saini, Urvashi Mothwal, Dipak Deka, Ravi Kant Agrawal. *Indian Veterinary Journal*, 90 (10): 54-58. (2013)
22. Comparative evaluation of real time PCR assay with conventional parasitological techniques for diagnosis of Trypanosoma evansi in cattle and buffaloes. Parul Sharma, P.D. Juyal, L.D. Singla, Deepti Chachra, **Hitesh Pawar**. *Veterinary Parasitology* 190: 375– 382. (2012)
23. Differential Expression of Th1- and Th2-type Cytokines in Peripheral Blood Mononuclear Cells of Murrah Buffalo (Bubalus bubalis) on TLR2 induction by B. Substalis peptidoglycan. Syed M Shah, G.V.V.P.S. Ravi Kumar, G.S.Brah, Lakshman Santra, **Hitesh Pawar**. *Asian Australsian Journal of Animal Sciences,* 25(7):1021-1028. (2012)
24. Effect of Year, Season and parity on milk production traits in Murrah buffalo. Hitesh N. Pawar, G.V.P.P.S. Ravi Kumar, Raman Narang. *The Journal of Buffalo Science*, 1(1):122-125. (2012)

25. Differential Expression Kinetics of Heat Shock Protein 70 and Associated Cytokines between cattle and buffalo species. **Hitesh N. Pawar**, G.S. Brah, R.K. Agrawal, Ramneek. *Journal of Cell and Tissue Research*, 12(2): 3173-3179. (2012)
26. Nucleotide sequence variability in TLR-5 in chicken and other species. G.V.P.P.S.Ravi Kumar, G.S.Brah, **Hitesh N. Pawar**, Syed M. Shah, M.L.Chaudhary, C.S. Mukhopadhyay. *Indian Journal of Poultry Science* 46(1): 111-115. (2011)
27. Semi-Quantitative differntial expression of TLR-5 and TLR-7 in Chicken tissues using automated capillary electrophoresis system. G.V.P.P.S. Ravi Kumar, **Hitesh N. Pawar**, G.S. Brah, Syed M. Shah, M.L.Chaudhary, C.S. Mukhopadhyay. *Indian Journal of Poultry Science*. 45(3):269-272. (2010)
28. Cloning and sequence analysis of chicken Toll like Receptor-7 Expressed sequence tag. G.V.P.P.S. Ravi Kumar, **Hitesh N. Pawar**, Pranav Mathur, C.S. Mukhopadhyay, G.S.Brah, M.L.Chaudhary. *Indian Journal of Poultry Science*. 45(2):115-119. (2010)
29. Cloning, sequencing and characterization of chicken growth hormone receptor gene. G.V.P.P.S. Ravi Kumar, G.S. Brah, M.L.Chaudhary, **Hitesh N. Pawar**, Pranav Mathur *Indian Journal of Poultry Science*. 44(1):15-19. (2009)

Book Chapters

1. Modulation of Animal Health through Reverse Genetics Applications. **Hitesh N Pawar**, Namita Mitra, Ramneek Verma. *Genomics and Biotechnological Advances in Veterinary, Poultry, and Fisheries* by Yashpal Malik. (2019)
2. Real-time PCR: Basic Concepts and Data Analysis, G.Ravi Kumar, **Hitesh Pawar**, Aswani Kumar, M.R.Varma and M.Shynu. *In Silico Approach for Genome Analysis*: by Ashok K. Tiwari (2012)
3. Real-Time PCR: Role and Application, G.V.P.P.S Ravi Kumar, **Hitesh Pawar** and T.S.Rao *Immunologic*: *Common Immunological and Molecular Techniques for Diagnosis of Infectious Diseases of humans, domestic animals, birds and fish* by Hari Mohan Saxena. (2009)
4. Pyrosequencing: A Novel Method of DNA Sequencing, G.V.P.P.S Ravi Kumar, Pranav Mathur and **Hitesh Pawar**. *Immunologic: Common Immunological and Molecular Techniques for Diagnosis of Infectious Diseases of humans, domestic animals, birds and fish* by Hari Mohan Saxena. (2009)

Abstracts

1. Crisper/Cas9 gene editing targeted to an intron of a novel isoform of the β-subunit of thyroid stimulating hormone in peripheral leukocytes. Klein JR and Pawar HN. Annual meeting of the American Association of Immunologist. The Journal of Immunology 202 (1 Supplement), 50.1 (2019).
2. Does Acute Heat Stress Differentially-Modulate RVLM Gene Expression of Ionotropic Neurotransmitter Receptors in Young and Aged F344 Rats? Hitesh N. Pawar, Sivasai Balivada, Shawnee Montgomery, Michael J. Kenney. Experimental Biology 2016, Held at San Diego, CA, United States. The FASEB Journal 30 (1 Supplement), 1233.4 (2016)
3. Age Associated Downregulation of Glutamate/GABA Transporters Expression in Rostral Ventral Lateral Medulla (RVLM). Sivasai Balivada, Hitesh N. Pawar, Shawnee Montgomery, Chanran K. Ganta, Michael J. Kenney. Experimental Biology 2016, Held at San Diego, CA, United States. The FASEB Journal 30 (1 Supplement), 1233.10 (2016)

4. Analysis of RVLM Gene Expression in Young, Middle-Aged and Aged F344 Rats. Chanran Ganta, Hitesh Pawar, A Garcia, N Lu, K Becker, Michael Kenney. Experimental Biology 2015, Held at Boston, MA, United States. The FASEB Journal 29 (1 Supplement), LB718 (2015)
5. Cloning, Expression and immunological characterization of 31 kDa, 28 kDa, and 22 kDa outer membrane proteins (Omp31, Omp 28, Omp22) from Brucella abortus clinical isolates. G. Kaur, Ramneek, P. Minhas, D. Kaur, H.N. Pawar, K. Mahajan, J. Dhakal, N Saini, D Deka and R.K. Agrawal. XIth Annual Conference of Indian Association of Veterinary Public Health Specialists (IAVPHS), Ludhiana, India. (2012)
6. Molecular cloning, overexpression and immunological characterization of genes encoding outer membrane lipoproteins from Leptospira interrogans. D. Kaur, Ramneek, H.N. Pawar, G. Kaur, K. Mahajan, N. Saini, J. Dhakal, D. Deka and R.K. Agrawal. XIth Annual Conference of Indian Association of Veterinary Public Health Specialists (IAVPHS), Ludhiana, India. (2012)
7. Molecular cloning, overexpression and immunological characterization of outer membrane protein F, I and L (OprF, OprI and OprL) from Pseudomonas aeruginosa. K. Mahajan, Ramneek, D. Kaur, H.N. Pawar, G. Kaur, J. Dhakal, N. Saini, P. Minhas, D. Deka and R.K. Agrawal. XIth Annual Conference of Indian Association of Veterinary Public Health Specialists (IAVPHS), Ludhiana, India. (2012)
8. Expression and purification of cytolethal distending toxin B (CdtB) from Salmonella enterica serovar Typhi. R.K. Agrawal, U. Mothwal, P. Minhas, J. Dhakal, N. Saini, D. Kaur, H.N. Pawar, K. Mahajan, D. Deka and Ramneek. XIth Annual Conference of Indian Association of Veterinary Public Health Specialists (IAVPHS), Ludhiana, India. (2012)
9. Development and evaluation of duplex PCR for rapid diagnosis and differentiation of Salmonella Typhi and ParatyphiA from other salmonellae. U. Mothwal, R.K. Agrawal, H.N. Pawar, D. Kaur, P. Minhas, J. Dhakal, N. Saini, K. Mahajan, D. Deka and Ramneek. XIth Annual Conference of Indian Association of Veterinary Public Health Specialists (IAVPHS), Ludhiana, India. (2012)
10. Cloning, sequencing and phylogenetic analysis of heat shock protein 70 (HSP70) gene from ruminant species. Hitesh N Pawar, Ravi Kant Agrawal, Ramneek and G. S. Brah National symposium on "Effective utilization of translational research platforms for animal biotechnology" Sardarkrishinagar, Gujarat (2011)
11. Cloning, expression and purification of immunodominant outer membrane protein OMP31 from Brucella Spp. Jagdeep Singh, Daljit Kaur, Hitesh N Pawar, Ramneek, Dipak Deka and Ravi Kant Agrawal. National symposium on "Effective utilization of translational research platforms for animal biotechnology" Sardarkrishinagar, Gujarat (2011)
12. Eukaryotic expression and characterization of BHV-1 Glycoprotein D (GD) as a potential diagnostic agent. Sylvestre, Rohini Sachdeva, Rupali, Namita Mitra, Hitesh N Pawar, Dipak Deka, Ravi Kant Agrawal, Ramneek. National symposium on "Effective utilization of translational research platforms for animal biotechnology" Sardarkrishinagar, Gujarat (2011)
13. Expression and characterization of recombinant heat shock protein 70 (HSP70) from Indian water buffalo. Pawar H., Agrawal R.K., Ramneek and Brah G.S. International symposium on "Role of biotechnology in conserving biodiversity and livestock development for food security and poverty alleviation" Bikaner, Rajasthan (2010)
14. Genetic Diversity Analysis in chickens using Microsatellite Markers. A. Chattopadhyay, G. Ravi Kumar, P. Mathur, H. Pawar, G.S. Brah and M.L. Chaudhary. National symposium on Livestock Biodiversity Conservation and Utilization: Lessons from Past and Future Perspectives (2009)

15. Expression patterns of chicken Toll-like receptor- 2, 5, and 7 in different tissues by Semi-quantitative PCR. G.V.P.P.S. Ravi Kumar, Hitesh N. Pawar, Pranav Mathur, C.S.Mukhopadhyay and G.S. Brah. XXVI Annual Conference of Indian Association of Veterinary Pathologists and C L Davis Satellite Seminar on 'Advanced Descriptive Techniques- Ultrastructure, Cytology and Immunohistochemistry' and International Symposium (2009)
16. Cloning, Sequencing and phylogenetic analysis of Toll like Receptor 7 in chickens. G.V.P.P.S.Ravi Kumar, G.S.Brah, Pranav Mathur, Hitesh Pawar, and C.S. Mukhopadhyay 'Indian Poultry Sector and Global Scenario' Proceedings of XXVI Annual Conference and National Symposium of IPSACON, India. (2009)
17. Expression profiling of heat shock protein (HSP70) and heat shock transcription factor (HSF1) in Murrah buffaloes by Real Time SYBR green assay. Hitesh Pawar, Ravi Kumar, Raman Narang and A.K.Jain. International Society for Animal Genetics Conference, New Delhi, India. (2009)
18. Cloning, Sequencing and Characterization of 5'UTR region of Neuropeptide Y gene in chickens and quails: G.V.P.P.S.Ravi Kumar, Hitesh Pawar, G.S.Brah, M.L.Chaudhary and Pranav Mathur. The Annual Conference & national symposium of Indian Poultry Science Association (IPSACON) Poultry production in India: Threats and opportunities. (2008)

Poster Presentation in Conferences

- Crisper/Cas9 gene editing targeted to an intron of a novel isoform of the β-subunit of thyroid stimulating hormone in peripheral leukocytes. Klein JR and Pawar HN. Annual meeting of the American Association of Immunologist. The Journal of Immunology 202 (1 Supplement), 50.1 (2019).
- Does Acute Heat Stress Differentially-Modulate RVLM Gene Expression of Ionotropic Neurotransmitter Receptors in Young and Aged F344 Rats? Hitesh N. Pawar, Sivasai Balivada, Shawnee Montgomery, Michael J. Kenney. Experimental Biology 2016, Held at San Diego, CA, United States. (2016)
- Poster presentation in Experimental Biology Conference, Held at Boston, United States (2015). Analysis of RVLM Gene Expression in Young, Middle-Aged and Aged F344 Rats. Chanran K. Ganta, Sivasai Balivada, Hitesh Pawar, Anthony Garcia, Nanyan Lu, Kevin G. Becker, Michael J. Kenney.
- Poster presentation in XVII Annual Convention of Indian Society for Veterinary Immunology and Biotechnology (ISVIB) International symposium on "Role of biotechnology in conserving biodiversity and livestock development for food security and poverty alleviation" held at Bikaner, Rajasthan in Dec 2010
- Poster presentation in national Conference on "New Horizons in Animal Breeding Technologies for Accelerating Livestock Production and Health" held at Indian Veterinary Research Institute, Izatnagar, Utter Pradesh in Jan 2011
- Poster presented in the Bioinformatic Characterization of Gallinacin (Beta Defensin) Genes 1, 2 and 7 in Avians. C. S. Mukhopadhyay, R K Agrawal, GVPPS Ravi Kumar, H N Pawar, Swati, G S Brah and N Mitra. 2011. Poster presented and abstract published in the National conference on "New horizons in Animal breeding Technologies for Accelerating Livestock Production and Health", organized by Indian Society of Animal genetics and Breeding and Division of Animal genetics (IVRI) at IVRI, Izatnagar, UP (243122) from 20th to 21st January, 2011: (Page 156-157).

- Poster Presentation in XVIII Annual Convention of Indian Society for Veterinary Immunology and Biotechnology (ISVIB) & national symposium on "Effective utilization of translational research platforms for animal biotechnology" held at Sardarkrishinagar, Gujarat in Dec 2011
- Expression patterns of Chicken Toll like Receptor- 2, 5 and 7 in different tissues by semi-quantitative PCR. G.V.P.P.S. Ravi Kumar, H.N. Pawar, P. Mathur, C. S. Mukhopadhyay and G.S. Brah. 2009.
- Poster presented in the "XXVI Annual Conference of Indian Association of Veterinary Pathologists; C L Davis Satellite Seminar on 'Advanced Descriptive Techniques- Ultrastructure, Cytology and Immunohistochemistry' and International Symposium on 'Philosophy of Disease Diagnosis Through Morphological to Biomolecular Approaches' and Core Theme 'Diagnostic Pathology', organized by Department of Veterinary Pathology, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, Punjab, India during October 28-30, 2009.

Extension Articles

- "Candidate gene: Polymerase Chain Reaction- Restriction Fragment Length Polymorphism (PCR-RFLP)" G.V.P.P.S.Ravi kumar, Syed. M.Shah and Hitesh Pawar.
- "SAS Program for Real Time RT-PCR analysis". G.V.P.P.S.Ravi Kumar, A.K.Tiwari, Aditya Sahoo, Juwar Doley, R.S. Rajmani, Uttara .C, Lovleen.S, Shikha.S, Hitesh Pawar and Syed.M. Training on "Strengthening statistical computing for NARS" Sept 20th – 25th 2010. Division of Animal Biotechnology, Indian Veterinary Research Institute, Izatnagar, Bareilly (India)

Training/Workshop/Conferences attended

- Border Biomedical Research Center Symposium (UTEP) El Paso, Texas, USA **Sept, 2017**
- Experimental Biology Conference, San Diego, USA **Mar, 2016**
- Experimental Biology Conference, Boston, USA **Mar, 2015**
- National Workshop-cum-training program on 'In Silico Approach for Genome Analysis' Indian Veterinary Research Institute, Bareilly, Uttar Pradesh **Mar, 2012**
- Seminar on 'Nanotechnology: Its scope and perspectives in Veterinary sciences', GADVASU, Ludhiana, Punjab **Dec, 2011**
- National symposium on 'Effective utilization of translational research Platforms for animal biotechnology' Sardarkrishinagar, Gujarat **Dec, 2011**
- Workshop on 'AKTA Prime Plus-Protein Purification' School of Animal Biotechnology, GADVASU, Ludhiana **Sept, 2011**
- Workshop on 'Proteomics-2D PAGE' School of Animal Biotechnology, GADVASU, Ludhiana **Sept, 2011**
- National symposium on 'New Horizons in Animal Breeding Technologies for Accelerating Livestock Production and Health' Indian Veterinary Research Institute, Izatnagar, Utter Pradesh **Jan, 2011**
- International symposium on 'Role of biotechnology in conserving Biodiversity and livestock development for food security and poverty alleviation' Bikaner, Rajasthan **Dec, 2010**

- Training on 'Real Time PCR' **Nov. 2008**
  Conducted by Applied Biosystems Corporation
  School of Animal Biotechnology, GADVASU, Ludhiana
- National Workshop-cum-training programme on 'Nano technology' **Oct 2008**
  Indian Veterinary Research Institute, Bareilly, Uttar Pradesh.

Nucleotide Sequences Published in NCBI Gene Bank- 72

- Two sequences of Neuropeptide Y gene in chicken and one in quail: EU447658, EU447659 & FJ409219
- Growth Hormone Receptor gene in chicken and quail: EU477070 & FJ411174
- Two sequences of Stem cell antigen gene (SCA2) (chicken & quail): FJ411175, FJ411176
- Toll Like Receptor 7 and 5 in chickens and TLR6 in Buffalo: FJ908712, GU370775 and GQ866885
- Two TLR 2 sequences in Fish, buffalo and goat: GU980870, GU134618, GU441859, GU980871
- Fifteen Chickens and quails gallinacin-gene, their accession nos. are HM641236, HM641237, HM641238, HM641239, HQ216222, HQ216223, HQ216224, HQ216225, HQ216226, HQ216227, HQ216228, HQ216229, HQ216230, HQ216231, HQ216232 respectively
- Fish sequences JF907407, JF502843, JF894289, JF502844, JF502842, JN202721, JN202722
- Gallus gallus hsp70 gene (2) and Mycobacterium hsp70: GU980869, JX827254, JX026662
- Brucella Spp. Outer Membrane Protein omp16, 19, 22, 25, 28, 31 and dnaJ: KC460536, JQ865996, JX040477, JQ865998, JQ865997, JF734338 and JQ866000.
- Full length (orf) sequences of HSP70 in buffalo, cattle, sheep, and goat: JF502845, JN604432, JN604433 and JN604434 respectively and HSP10 in buffalo and sheep: JX218041, JX218042.
- Orf of Salmonella entartica cdtB, clyA, ompC: JX040478, JQ228530, JX040479.
- Sequences (orf) of Psuedomonas aeruginosa oprF, oprI, ToxA, elastase, furA, oprL, ppp, Type IV pili, flaC: JX040481, JX040480, JX026663, JX040483, JQ690555, JQ228528, JX040484, JQ690556, JX827255, JX827256.
- Sequences (orf) of Leptospira spp. ompL1, oprL1, lipL21, lipL41, lipL45, flaB: JQ865999, JX040482, JQ228529, JQ690557, JX827257, JX827258

Other

- Served **as Reviewer** for following refereed scientific journals;
  - BMC Genomics, Therapeutics and Clinical Risk Management, International Journal of Biometeorology, 3Biotech, National Academy Science Letters, African Journal of Biotechnology, Proceedings of the National Academy of Sciences, Biological Sciences, India (NASB), Journal of Buffalo Science, American Journal of Biomedical and Life Sciences, Basic Research Journal of Agricultural Science and Review

- Served as Judge in two poster presentation sessions (Pathobiology and Bioinformatics) at 6th Annual Graduate Student Research Expo 2016 organized by University of Texas at El Paso on Nov 11, 2016.
- Served as Judge in oral presentation sessions (Novel Approaches to Disease Detection) at 7th Annual Graduate Student Research Expo 2017 organized by University of Texas at El Paso on Nov 10, 2017
