

## **PERSONAL PROFILE**

Name : Dr. B.V. Sunil Kumar  
Designation : Senior Scientist  
Corresponding Address : ICAR-National Institute on Foot and Mouth Disease,  
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## **EDUCATION & QUALIFICATIONS**

Class/Degree	Year of Passing	University
B.V.Sc. & A.H	2006	West Bengal University of Animal and Fishery Sciences (Kolkata)
M.V.Sc. (Animal Biochemistry)	2008	ICAR-Indian Veterinary Research Institute (Izatnagar)
Ph.D. (Animal Biochemistry)	2011	ICAR-Indian Veterinary Research Institute (Izatnagar)

## **EMPLOYMENT**

Sl.No.	Institution/Place	Position	Duration
1.	College of Animal Biotechnology, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana-141004	Biochemist	28.10.2011 to 27.10.2023
2.	College of Animal Biotechnology, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana-141004	Senior Scientist	28.10.2023 to 09.05.2025
3.	ICAR-National Institute on Foot and Mouth Disease, Arugul, Bhubaneswar-752050	Senior Scientist	13.05.2025 continuing

## **TEACHING** (28.10.2011 to 09.05.2025):

All the courses of Veterinary Biochemistry and Animal Biotechnology at UG and PG level.

## **RESEARCH AREA OF INTEREST**

Tumor biology; Adjuvants; Stress biology.

## **EARNED RESEARCH PROJECTS**

Sr. no.	Title of project	Funding agency	Capacity
1.	Development and evaluation of sero-diagnostic assay for timely diagnosis and prognosis of mammary tumors	DBT (2013-2016)	PI

2.	Studies on cloning and expression of heat shock proteins (hsps) of <i>Brucella</i> spp. and their immunological characterization in experimental animals	UGC (2014-2017)	PI
3.	Development and evaluation of therapeutic xenogenic DNA vaccines based on canine homologous marker sequences against mammary tumors in mice models.	DBT (2018-2021)	PI
4.	Development of biodegradable biomaterial for its application in healthcare technologies.	ANRF (2025, approved)	PI
5.	Modelling of indigenous diagnostics and immunopotent vaccine candidates to combat African swine fever in India.	DBT (2021-2024)	Co-PI
6.	Improvement of rural backyard poultry lines through genetic and managerial interventions under low input system	NLM (2023-2026)	Co-PI

### **AWARDS/FELLOWSHIPS**

- ICAR Junior Research Fellowship.
- CSIR-JRF+NET.
- ICAR-SRF qualified.
- ICAR-NET qualified.
- **Best Teacher award-2022.** College of Animal Biotechnology, Guru Angad Dev Veterinary and Animal Sciences University.
- National Seminar & 3rd annual meeting of Society of Veterinary Science & Biotechnology, 2015. (**Best paper award**).
- XXII annual convention of ISVIB (VIBCON-2015) (**Young Scientist award**).
- National symposium on “Sustainable livestock development for food and nutritional security” 2016. (**Best poster award**).
- International Symposium of SIIP, 2021 (**Young Scientist award**).
- National Symposium of ISBD, 2021 (**Best poster award**).
- XXVI Annual Convention of ISVIB (VIBCON-2019/20/21). Feb 4-5, 2022. (**Best Oral presentation award**).
- XXVI Annual Convention of SVIB (VIBCON-2019/20/21). Feb 4-5, 2022. (**Best poster award**).
- National symposium of SVBBI, 2023. (**Best poster award**).
- National symposium of SVBBI, 2023. (**Best paper award**).
- 8th Annual Convention of SVBBI (SVBBICON-2024) organized by College of Veterinary Science, DUVASU, Mathura from Dec 20-21, 2024. (**Best poster award**).
- Annual conference of the SOHB, 2024. (**Best paper award**).

### **TRAINING COURSES/EVENTS ORGANIZED**

Sl No	Details of Training Programme	Duration	Sponsoring Agency	Capacity
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1.	Hands on training on “Conventional methods of disease diagnosis”	15-02-2020 (01 day)	ICAR	Course coordinator
2.	National training on “Advances in mammary tumor diagnosis and treatment”.	15th to 17th December, 2020	DBT, GOI	Organizing secretary
3.	National workshop on “Ethical considerations in scientific writing”.	July 22, 2022	GADVASU and AMI	Organizing secretary
4.	Hands-on training program on “Sequence Analysis and Heterologous Protein Expression”	March 28-30, 2022	DBT, GOI	Coordinator
5.	Hands-on training program on “Molecular modelling and recombinant protein expression”	21st to 25th March, 2022.	DBT, GOI	Coordinator
6.	IDEATHON-2023 on “Biotechnology in precision livestock farming”.	July 17, 2023	ISVIB and supported by the Start-up Punjab	Organizing secretary
7.	Post Graduate Diploma in Molecular Biology & Genomics	1 year	GADVASU	Program coordinator
8.	Revision of outline of curriculum for the UG programme (B. Tech, Biotechnology) for recommendation by ICAR-VI Dean’s Committee	2024-25	ICAR	Dean’s Nominee

## **LIST OF PUBLICATIONS**

### **Research articles (Best 12):**

1. Singh, K.P., Kumar, B.V.S\*, Dubey, P.P., Mehta, N. (2025). Heat shock protein B1 and NADPH oxidase 4 expression is associated with vital signs and antioxidant parameters in two different varieties of turkey under thermal stress. *Research in Veterinary Science*. doi.org/10.1016/j.rvsc.2025.105769.
2. Chaudhary, S., Kumar, B.V.S., Malik, Y.S., Deka, D., Sethi, R.S. (2025). Development of an E2 Protein Based Lateral Flow Assay as a Point-of-Care Test for the Diagnosis of Classical Swine Fever. *Indian Journal of Microbiology*. <https://doi.org/10.1007/s12088-025-01471-2>.
3. Sharma, A., Kumar, B.V.S\*, Dubey, P.P. & Kashyap, N. (2022). Delay in puberty is associated with heat shock protein B1 expression in native cross layer of Punjab under heat stress. *Reproduction in Domestic Animals* 57(3):284-291
4. Minhas, P., Kumar, B.V.S\*. & Verma, R. (2021). Expression of recombinant DnaK of *Brucella abortus* and its evaluation as immuno-modulator. *Archives of Microbiology* <https://doi.org/10.1007/s00203-021-02190-0>
5. Kaur, G., Kumar B.V.S., Singh, B. & Sethi, R.S. (2021). Exposures to 2,4-Dichlorophenoxyacetic acid with or without endotoxin upregulate small cell lung cancer pathway. *Journal of Occupational Medicine and Toxicology* 16:14

6. Sharma, A., Kumar, B.V.S\*., Dash, S., Singh, S. & Verma, R. (2020). Heat shock protein B1 expression is associated with age at sexual maturity in Rhode Island Red and Punjab Red layers under heat stress. *International Journal of Biometeorology*. doi.org/10.1007/s00484-020-01887-z
  7. Singh, P.P., Singh, S., Kumar, B.V.S., Sethi, R.S. & Verma R. (2020). Serum amyloid A (SAA) mRNA expression in chicken and quails in response to bacterial stress. *Comparative Immunology, Microbiology and Infectious Diseases*. doi.org/10.1016/j.cimid.2020.101421
  8. Saleem, A., Singh, S., Kumar, B.V.S., Arora, J.S. & Choudhary, R.K. (2019). Analysis of lysyl oxidase as a marker for diagnosis of canine mammary tumors. *Molecular Biology Reports* <https://doi.org/10.1007/s11033-019-04941-1> (NAAS 2022: 8.742)
  9. Minhas, P., Kumar, B.V.S. & Verma, R. (2019). Evaluation of immuno-modulating effect of recombinant heat shock protein 40 of *Brucella abortus* in mice. *3 Biotech* 9: 366
  10. Birdi, R., Kumar, B.V.S\*., Gupta, K., Kashyap, N. & Kumar A. (2019). Circulating level of heat shock protein 27 is elevated in dogs with mammary tumors. *3 Biotech* 9:229 (NAAS 2022: 8.893)
  11. Kumar, B.V.S\*., Bhardwaj, R., Mahajan, K., Kashyap, N., Kumar, A. & Verma, R. (2018). The overexpression of HSP90B1 is associated with tumorigenesis of canine mammary glands. *Molecular and Cellular Biochemistry* 440:23–31
  12. Pandey, M., Kumar, B.V.S\*., Gupta, K., Sethi, R.S., Kumar, A., Verma, R. (2018). Over-expression of mammaglobin-B in canine mammary tumors. *BMC Veterinary Research* 14:184-189
- \* Corresponding author

#### Review articles:

1. Kumar, B.V.S., Kataria, M., & Kumar, A. (2011). Matrix Metalloproteinase 11 (Mmp11) and its Role in Tumorigenesis in Pets. *Journal of Cell and Tissue Research*, 11(1), 2685–2690.
2. Kumar, B.V.S., Kumar, A., & Kataria, M. (2011). Effect of heat stress in tropical livestock and different strategies for its amelioration. *Journal of Stress Physiology and Biochemistry*, 7(1), 45-54.
3. Kumar, B.V.S., Singh, S., & Verma, R. (2017). Anticancer potential of dietary vitamin D and ascorbic acid: A review. *Critical Reviews in Food Science and Nutrition*, 57(12), 2623–2635. doi:10.1080/10408398.2015.1064086.
4. Choudhary, R. K., Kumar B.V.S., Mukhopadhyay, C.S., Kashyap, N., Sharma, V., Singh, N., Salajegheh Tazerji, S., Kalantari, R., Hajipour, P., Singh Malik, Y. (2024). Animal wellness: The power of multiomics and integrative strategies: Multiomics in improving animal health. *Veterinary Medicine International*, 2024, 4125118. doi:10.1155/2024/4125118.

#### Book/Book Chapters:

1. B.V. Sunil Kumar, Anuradha Sharma and YPS Malik. (2022). Canine mammary tumors. NIPA GenX Electronic Resources and Solutions Ltd, ISBN: 978-93-90591-05-3 (Book).
2. Kumar, B.V.S., Gopal, P.K. & Verma, R. (2019). Hsp90 in mammary tumorigenesis. *Heat Shock Protein 90 in Human Diseases and Disorders*. Chapter 5, Springer Nature Publishers (Dordrecht, Netherlands). 10.1007/978-3-030-23158-3.
3. Kumar, B.V.S., Gopal, P.K., Gurao, A. & Verma, R. (2020). Binary Role of Heat Shock Proteins in Cancer Immunotherapy: A Detailed Perspective. *Heat Shock Protein 90 in Human Diseases and Disorders*. HSP in Cancer Therapy. In: Heat Shock Proteins. Springer, Dordrecht. [https://doi.org/10.1007/7515\\_2020\\_34](https://doi.org/10.1007/7515_2020_34).

4. Kumar,B.V.S., Bhardwaj, H., Gurao,A., Kumar, N. and Malik, Y.P.S. (2022). Nucleic Acid Hybridization Techniques for Viral Disease Diagnosis: A Detailed Perspective. In book: Protocols for the Diagnosis of Pig Viral Diseases. DOI: 10.1007/978-1-0716-2043-4\_20
5. Kour,J., Singh,S. and Kumar,B,V,S\*. 2023. Moonlighting functions of microbial heat shock proteins: A deeper insight. Heat Shock Proteins in Translational Neuroscience. In: Heat Shock Proteins. Scientific Scholar, USA. ISBN: 979-8-9873112-2-6.
6. Kumar,B.V.S., & Dubey, P.P (2015). Heat Stress Management in Livestock. "Livestock and Poultry: Conservation and Improvement Techniques" Chapter-25, pp 285-93.

**Abstracts in conference proceedings: 30**

**Lead papers presented: 15**

**Popular articles: 20**

**Laboratory Manuals approved by GADVASU:**

1. Kumar,B.V.S., Choudhary, R.K & Sethi, R.S. (2021). Practical manual for Molecular Biology (Biotech-105).
2. Kumar,B.V.S., Singh S. & Singh, N.K. (2021). Practical manual for General Biochemistry (Biochem-201).
3. Kumar,B.V.S. (2021). Practical manual for Enzymology and Enzyme Technologies (Biochem-301).
4. Kumar,B.V.S., Singh,C., Sodhi, S., and Nayyar,S. Practical manual for General Veterinary Biochemistry (VPB-112) (2016-17).

**Students guided as major advisor:**

Sl No	Name of Student & Admission no	Degree	Year	Title of the thesis
1.	Kamalpreet Kaur, (L-2011-ABT-04-M)	M.Sc.	2013	Isolation characterization of lytic bacteriophages against <i>Staphylococcus aureus</i> .
2.	Neeraj Choudhary, (L-2012-ABT-07-M)	M.Sc.	2014	Expression profiling, cloning and characterization of the cDNA encoding erythroblastic leukemia viral oncogene homolog 2 ( <i>erbB2</i> ) from canine mammary tumor.
3.	Navneet Kaur, (L-2013-ABT-06-M)	M.Sc.	2015	Expression of tissue inhibitor of metalloproteinase-4 from canine mammary tumor.
4.	Rancy Birdi, (L-2016-ABT-06-M)	M.Sc.	2018	Development of ELISA for quantitation of circulating levels of Heat Shock Protein 27 in dogs with mammary tumor.
5.	Astha Sharma, (L-2017-ABT-01-M)	M.Sc.	2019	Association of small heat shock protein HspB1 expression with age at sexual maturity in layer chicken under heat stress.

6.	Ananya Aeri, (L-2019-BT-01-M)	M.Sc.	2022	Expression of Bcl2 associated athanogene-1 (BAG-1) in canine mammary tumors.
7.	Gurpreet Kaur, (L-2019-BT-04-M)	M.Sc.	2022	Expression of heat shock protein D1 (HSP60) in canine mammary tumors.
8.	Kulvir Pal Singh (L-2021-BT-02-M)	M.Sc.	2023	Association of heat shock protein B1 and NADPH oxidase 4 expression with thermal stress in two different varieties of turkey.
9.	Ramandeep Kaur, (L-2019-BT-04-D)	Ph.D.	2023	Evaluation of osteopontin as a diagnostic biomarker of canine mammary tumor.
10.	Shikha Sharma, (L-2020-BT-03-D)	Ph.D.	2023	Development of a multiplex immunoassay for detection of serum mammaglobins in dogs with mammary tumors.
11.	Himani Gautam (L-2021-BT-02-D)	Ph.D.	2025	Development of rapid immuno-assay(s) for the diagnosis of leptospirosis in cattle and dogs.