Curriculum Vitae

Dr Rabindra Prasad Singh, M.V.Sc, Ph.D., PGTMA
Director,
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Academic Qualifications

Qualification	Year	Subjects	Organization	% Marks/ Division
Degree in Veterinary Science & Animal Husbandry (B.V.Sc & AH)	1990	**Veterinary Science & Animal Husbandry**	Veterinary College, Mathura, C.S.A. University of Agriculture and Technology, Kanpur,	72.6% 1st Division
Master of Veterinary Science (**M.V.Sc)**	1994	**Veterinary Virology**	Deemed University, Indian Veterinary Research Institute (IVRI), Izatnagar,	86.7% 1st Division
Doctor of Philosophy (Ph.D.) (Veterinary Virology)	2002	**Veterinary Virology** (Major Subject), **Veterinary Bacteriology & Veterinary Immunology** (Minor Subjects)	Deemed University, Indian Veterinary Research Institute (IVRI), Izatnagar	85.6%
Post Graduate Diploma in Technology Management in Agriculture (PGD-TMA)	2012	• Intellectual Property Regime • IP Informatics • Technology Management • IP Prosecution and Litigation • Rural Innovation • Technology Entrepreneurship • Project Work "Impact of IVRI technologies and possible role of different PPP models in technology transfer/ commercialization"	University of Hyderabad	68%, 1st Division

Experiences

Office/Institution	Position	From	To
ICAR-Directorate of Foot and Mouth Disease, Mukteswar/Bhubaneswar	**Director**	31.01.2021	Till date
ICAR-Indian Veterinary Research Institute, Izatnagar	**Head, Division of Biological Products**	21.02.2015	30.01.2021
ICAR-Indian Veterinary Research Institute, Izatnagar	**Principal Scientist Division of Biological Products**	08.08.2011	20.02.2015
ICAR-Indian Veterinary Research Institute, Izatnagar	**Senior Scientist Division of Biological Products**	08.08.2008 08.08.2005	07.08.2011 07.08.2008
ICAR-Indian Veterinary Research Institute, Mukteswar/ Izatnagar	**Scientist (Senior Scale) Division of Biological Products**	18.05.2002	07.08.2005
ICAR-Indian Veterinary Research Institute, Mukteswar	**Scientist Division of Virology**	08.08.1996	17.05.2002
State Animal Husbandry Department, Rajasthan and Industry			
State Animal Husbandry Department, Rajasthan	**Veterinary Assistant Surgeon**	01.06.1995	July, 1996
Biomed Pvt. Ltd, Ghaziabad	**Scientist**	01 .11.1993	May, 1995

Publications

FMD

Research

1. Umanga Gunasekera,Jitendra Biswal,Gustavo Machado,Rajeev Ranjan,Saravanan Subramaniam,Manoranjan Rout,Jajati Mohapatra,Bramhadev Pattnaik, **Rabindra Prasad Singh**,Jonathan Arzt,Andres Perez,Kimberly VanderWaal (2022) Impact of mass vaccination on the spatiotemporal dynamics of FMD outbreaks in India, 2008–2016. **Transboundary and Emerging Diseases**. https://doi.org/10.1111/tbed.14528.
2. Subramaniam S, Mohapatra JK, Sahoo NR, Sahoo AP, Dahiya SS, Rout M, Biswal JK, Ashok KS, Mallick S, Ranjan R, Jana C, **Singh RP**. Foot-and-mouth disease status in India during the second decade of the twenty-first century (2011-2020). **Vet Res Commun.** 2022 Dec;46(4):1011-1022.
3. Jitendra K Biswal , Biswa Ranjan Jena , Syed Zeeshan Ali , Rajeev Ranjan , Jajati K Mohapatra , **Rabindra Prasad Singh** (2022). One-step SYBR green-based real-time RT-PCR assay for detection of foot-and-mouth disease virus circulating in India. **Virus Genes,** 58(2):113-121

Rinderpest

Research

1. Bandyopadhyay, S. K., **Singh, R.P.** and Chandra, U. (1999). Efficacy of the micro-method of the assessment of neutralizing antibodies following vaccination/infection with rinderpest virus. **Indian Journal of Animal Sciences 69 (2):** *82-84.*
2. **Singh, R.P.,** Sreenivasa, B.P., Dhar, P., Roy, R.N. and Bandyopadhyay, S.K. (2000). Development of a monoclonal antibody based Competitive ELISA for the detection of Rinderpest antibodies. **Rev.Sci.Tech.Off.int.Epiz**., **19 (3).** 754-763.

Popular Articles, Technical Articles, Book Chapters

1. **Singh, R.P.** (2014). Control & eradication of Cattle Plague in India & its impact on Indian livestock farming. **Indian farming**.
2. Singh, Rajeev and **Singh, R.P**. (2009). Ponknee (Rinderpest). Book chapter in Hindi in "Pashuon me hone vale pramukh rogo ka nidan evam samadhan", edited by Rajeev Singh and A. K. Srivastava, National Dairy Research Institute. pp.7-10.

Reports

1. Standard Operating Procedure (SOP) for Production and Quality Control of Rinderpest Competitive-ELISA Kit (Approved by **FAO, world Reference Laboratory**, Pirbright Institute, U.K., Recommended by **OIE**, Used under **NPRE**)
2. SOP for maintenance of Rinderpest Virus for **HSADL Bhopal.**
3. Rinderpest Contingency Plan India: Post Eradication Era **(DAHD, GoI)**
4. Chapter on Rinderpest Terrestrial code **(OIE),** as Member *adhoc* group on rinderpest, 2020 (OIE).

Peste des Petits Ruminants (PPR)

Research Publications

1. Mondal, B., Sreenivasa, B.P., Dhar, P., **Singh, R.P**. and Bandyopadhyay, S.K. (2001). Apoptosis induced by peste des petits ruminants virus in goat peripheral blood mononuclear cell. **Virus Research 73(2)**: 113-119.
2. Dhar, P., Sreenivasa, B.P., Barrett, T., Corteyn, M., **Singh, R.P**. and Bandyopadhyay, S.K. (2002). Recent epidemiology of peste des petits ruminants virus (PPRV). **Veterinary Microbiology** 88(2): 153-159.
3. Sarkar, J., Sreenivasa B.P, **Singh, R.P**., Dhar, P. & Bandyopadhyay S.K. (2003). Comparative efficacy of various chemical stabilizers on the thermostability of live attenuated peste des petits ruminants (PPR) vaccine. **Vaccine,** 21(32), 4728-4735.
4. **Singh, R.P.,** Sreenivasa, B.P., Dhar, P, Shah, L.C., Babdyopadhyay, S.K., (2004). Development of Monoclonal antibody based competitive- ELISA for detection and titration of antibodies to *peste des petits ruminants* virus. **Veterinary Microbiology**, **98:** 3-15.
5. **Singh, R.P.,** Sreenivasa B.P., Dhar P. & Bandyopadhyay S.K. (2004). – A sandwich ELISA for the diagnosis of *peste des petits ruminants* (PPR) infection in small ruminants

using anti-nucleocapsid protein monoclonal antibody. **Archives of Virology, 149** (11): 2155-2170.

6. **Singh, R.P.,** Bandyopadhyay, S.K.**,** Sreenivasa, B.P. and Dhar, P. (2004). Production and Characterization of monoclonal antibodies to *peste des petits ruminants* (PPR) virus. **Veterinary Research Communications,** 28: 623-639.
7. **Singh**, **R.P.**, Saravanan, P., Sreenivasa, B.P., Singh, R., K. and Bandyopadhyay S. K. (2004). Prevalence and distribution of *peste des petits* ruminants (PPR) virus infection in small ruminants of India. ***Rev. Sci. Tech. Off. int. Epiz*.., 23** (3): 807-819.
8. Kumar, P., Tripathi, B.N., Sharma, A.K., Kumar, R., Sreenivasa B.P., **Singh, R.P.,** Dhar, P. and Bandyopadyaya, S.K. (2004). Pathological and immuno histochemical study of experimental Peste des petits ruminants virus infection in Goats. **J. Vet. Med.** B 51: 1-7.
9. Saravanan P., **Singh**, **R.P.,** Balamurgan, V., Dhar, P., Sreenivasa, B.P. Muthuchelvan, D., Sen, A., Aleyay A.G., Singh, R.K. and Bandyopadhyay, S. K. (2004). Development of a N gene-based PCR-ELISA for Detection of Peste-des-Petits-Ruminants virus in clinical samples. **Acta. Virologica** 48: 249-255.
10. Muthuchelvan D., A. Sanyal, **Singh**, **R.P.,** D. Hemadri, A. Sen, B.P.Sreenivasa, R.K.Singh and S. K. Bandyopadhyay (2005). Comparative sequence analysis of the large polymerase protein (L) gene of peste-des-petits ruminants (PPR) vaccine virus of Indian origin. **Archives of Virology.** 150 (12): 2467-2481.
11. Rajak, KK, Sreenivasa BP, Hosamani, M, **Singh, R.P**., Singh, S.K., Singh, RK and Bandyopadhyay (2005). Experimental studies on immunosuppressive effects of peste des petits ruminants (PPR) virus in goats. **Comparative Immunology, Microbiology & Infectious Diseases**. 28: 287-296.
12. Muthuchelvan D,, Sanyal A,, Sreenivasa B,P,, Saravanan P,, Dhar P,, **Singh, R.P.**, Singh R.K., Bandyopadhyay S.K. (2006). Analysis of the matrix protein gene of the Asian lineage of peste-des petits ruminants vaccine virus. **Veterinary Microbiology**. 113(1-2):83-87.
13. Dechamma, H.J., Dighe, V., Ashok Kumar, C. **Singh**, **R. P.,** Jagadish, M. and Kumar Satish (2006). Identification of T-helper and Linear B epitope in the hypervariable region of nucleocapsid protein of PPRV and its use in the development of specific antibodies to detect viral antigen. **Veterinary Microbiology, 118: 201-211.**
14. George A., Dhar P., Sreenivasa B.P., **Singh, R.P.** and Bandyopadhyay, S.K. (2006). The M and N gene –based simplex and multiplex PCR are better than the F or H gene based simplex PCR for Peste des Petits Ruminants virus. **Acta Virologica**, 50:217-222.
15. Dhar, P., Muthuchelvan D., Sanyal, A., Kaul, R., **Singh, R.P**., Singh, R.K., Bandyopadhyay, S.K. (2006). Sequence analysis of the haemagglutinin and fusion protein genes of peste-des-petits ruminants vaccine virus of Indian origin. **Virus Genes** 32: 71-78.
16. **Singh**, **R.P.**, Saravanan, P., Sreenivasa, B.P., Shah, L.C., Singh, R., K. and Bandyopadhyay S. K. (2006). Comparison of diagnostic efficacy of a monoclonal antibody based competitive-ELISA test with similar commercial test for the detection of antibodies to peste des petits ruminants (PPR) virus. **Veterinary Research Communications 30,** 325-330.
17. Balamurugan, V. Sen, A. Saravanan, P. **Singh, R.P.** Singh, R.K. Rasool T.J. and Bandyopadhyay, S.K. (2006). One-step multiplex RT-PCR assay for the detection of *Peste-des-petits-ruminants* virus in clinical samples. **Veterinary Research Communications, 30:** 655-666.

18. Sreenivasa, B.P., **Singh, R.P.,** B. Mondal, Dhar, P. and Bandyopadhyay, S.K. (2006). Use of marmoset B95a cells for cultivation of *peste des petits ruminants* (PPR) virus. **Veterinary Research Communications, 30:** 103-108.
19. Balamurugan, V., **Singh, R. P**., Saravanan, P., Sen, A., Sarkar, J., Sahay, B., Rasool, T. J. and Singh, R. K. (2007). Development of an indirect ELISA for the detection of antibodies against *peste des petits ruminant's* virus in small ruminants. **Veterinary Research Communications, 31:** 355-364.
20. Saravanan, S., **Singh, R.P.,** Balamurugan, V., Saravanan, P., Sen, A., Sahay, B., Sarkar, J., and Singh R.K. (2007). Production and Characterization of Neutralizing Monoclonal Antibodies against Haemagglutinin protein of peste des petits ruminants (PPR) Vaccine Virus. **J. Appl. Anim. Res**. **32:** 207-210.
21. Chaudhary, S.S., Pandey, K. D., **Singh, R. P**., Verma, P. C., and Gupta, P. K. (2009). A Vero cell derived combined vaccine against sheep pox and peste des petits ruminants for sheep. **Vaccine 27**: 2548-2553.
22. Saravanan, P., Balamurugan, V., Sen, A., Sreenivasa, B.P., **Singh, R.P**., Bandyopadhyay, S.K. and Singh, R.K. (2010). Immune response of goats to a Vero cell adapted live attenuated homologous PPR vaccine. **Indian Vet. J.** 87 (1): 1-3.
23. **Singh, R.P.,** De U. K. and Pandey K. D. (2010). Virological and antigenic characterization of two Peste des Petits Ruminants (PPR) vaccine viruses of Indian origin**. Comparative Immunology, Microbiology & Infectious Diseases. 33:343-353.**
24. **Singh, R.P.** (2011). Control strategies for Peste des petits ruminants in small ruminants of India. **Rev. sci. tech. Off. int. Epiz**., **30**(3): 879-887.
25. Sarkar, J., Belaineh, G., Sreenivasa B.P. & **Singh, R.P.** (2012). Development of a cell-ELISA using anti-nucleocapsid protein monoclonal antibody for the titration of PPR vaccine virus. **Indian J. Comp. Microbiol. Immunol. Infect. Dis.** 33 (1&2), 18-20.
26. **Singh, R.P.** and Bandyopadhyay S.K. (2015). Peste des petits ruminants vaccine and vaccination in India: sharing experience with disease endemic countries. **Virus Disease**, 26: 215–224.
27. Santhamani R, **Singh, R.P.,** Njeumi F. (2016) . Peste des petits ruminants diagnosis and diagnostic tools at a glance: perspectives on global control and eradication. **Arch Virol.** 161:2953-2967.
28. Sahu A.R., Wani S.A., Saminathan M., Rajak K.K., Sahoo A.P., Pandey A., Saxena S., Kanchan S., Tiwari A.K., Mishra B., Muthuchelvan D., **Singh, R.P.**, Singh Y., Baig M., Mishra B.P., Singh R.K., Gandham R.K. (2017) Genome sequencing of an Indian peste des petits ruminants virus isolate, Izatnagar/94, and its implications for virus diversity, divergence and phylogeography. **Archives of Virology, 162**(6):1677-1693.
29. Manjunath S., Mishra B.P., Mishra B., Sahoo A.P., Tiwari A.K., Rajak K.K., Muthuchelvan D., Saxena S., Santra L., Sahu A.R., Wani S.A., **Singh R.P.,** Singh Y.P., Pandey A., Kanchan S., Singh R.K., Kumar G.R. and Janga S.C. (2017). Comparative and temporal transcriptome analysis of peste des petits ruminants virus infected goat peripheral blood mononuclear cells. **Virus Res.** 229:28-40.
30. Haq A.A., Santhamani R., Chakravarti S., Yadav A.K., Rajak K.K., Upmanyu V., Sinha D.K., Malik Y.P.S., **Singh, R.P. (2017).** Investigation on Peste des Petits Ruminants Outbreak in Goats of Bareilly District of Uttar Pradesh, India. **Journal of Immunology and Immunopathology,** 19 (1): 47-54.

31. Bora M., Yousuf R.W., Dhar P. and **Singh, R.P.** (2018). An overview of process intensification and thermo stabilization for upscaling of Peste des petits ruminants vaccines in view of global control and eradication. **Virus Disease** 29 (3): 285-296.
32. Basagoudanavar S.H., Hosamani M., Muthuchelvan D., **Singh, R.P.,** Santhamani R., Sreenivasa B.P., Saravanan P., Pandey A.B., Singh R.K. and Venkataramanan R. (2018). Baculovirus expression and purification of peste-des-petits-ruminants virus nucleocapsid protein and its application in diagnostic assay. **Biologicals**, 55:38-42.
33. Bora M., Yousuf R.W., Dhar P., Manu M., Zafir I., Mishra B., Rajak, K. K. and **Singh, R.P.** (2019) Characterization of defective interfering (DI) particles of Peste des petits ruminants vaccine virus Sungri/96 strain-implications in vaccine upscaling. **Biologicals** 62: 57-64.
34. M Bora, CL Patel, KK Rajak, MR Verma, RW Yousuf, **Singh, R.P.** (2020). Development of a process for upscaling and production of thermotolerant Peste-des-petits ruminants vaccine. **VirusDisease** 31 (3), 357-368.

Popular Articles, Book Chapters, Technical Articles, Technical Buletins

1. Singh R.K., **Singh, R.P.,** Bandyopadhyay, S.K. and Yadav, M.P. (2006). Diagnosis of Peste Des Petits Ruminants (PPR) Disease in sheep and goats: A Laboratory Manual
2. **Singh, R.P.** and Singh, Rajeev. (2009). PPR, Book chapter in Hindi in "Pashuon me hone vale pramukh rogo ka nidan evam samadhan", edited by Rajeev Singh and A. K. Srivastava, pp.11-13.
3. **Singh, R.P**. (2012). Strategic Control of Peste des Petits Ruminants. In Sudhi Ranjan Garg (Eds.).Veterinary and Livestock Sector: A Blueprint for Capacity Building, pp 327-345. Satish Serial Publishing House, Delhi. ISBN no. 978-93-81226.
4. Wohlsein, P. and **Singh, R. P.** (2015). Peste des Petits Ruminants (PPR) in unusual hosts: Epidemiology, Disease and Impact on Eradication. M. Munir (ed.), Peste des Petits Ruminants Virus, Springer-Verlag Berlin Heidelberg. Pp 95-118. DOI 10.1007/978-3-662-45165-6_6.
5. Diallo A, **Singh, R.P**. (2021). Peste des Petits Ruminants: in Veterinary Vaccines: Principles and Applications *edited by Samia Metwally, Gerrit Viljoen, Ahmed El Idrissi*. Pp: 283-294, FAO of United nations and Wiley Blackwell.

Reports

1. SOP for Production and Quality Control of PPR Competitive-ELISA Kit
2. SOP for Production and Quality Control of PPR Sandwich-ELISA kit
3. SOP: A process for preparation of combined PPR-Sheep Pox Vaccine.
4. SOP for Production and Quality Control of LFA for PPR antigen and antibody detection from Identical strip

Rabies

Research Publications

1. Reddy G.B.M., Singh R., **Singh R.P.**, Singh K.P., Gupta P.K., Mahadevan A., Shankar S.K, Ramakrishnan M.A. and Verma R. (2011). Molecular characterization of Indian rabies virus isolates by partial sequencing of nucleoprotein (N) and phosphoprotein (P) genes. **Virus Genes, 43:** 13-17.
2. Sonwane A.A., Dahiya S.S., Saini M., Chaturvedi V.K., **Singh, R.P.** and Gupta P.K. (2012). Inhibition of rabies virus multiplication by siRNA delivered through adenoviral vector in vitro in BHK-21 cells and in vivo in mice. **Res Vet Sci**. **93**: 498-503.
3. Chander Vishal, **Singh, R.P.** and Verma P.C. (2012). Development of Monoclonal antibodies suitable for rabies virus antibody and antigen detection. **Indian J. Virology**. 23 (3): 317-325.
4. Singh N.K., Meshram C.D., Sonwane A.A., Dahiya S.S., Pawar S.S., Chaturvedi V.K., Saini M., **Singh, R.P.**, Gupta P.K. (2013). Protection of Mice Against Lethal Rabies Virus Challenge Using Short Interfering RNAs (siRNAs) Delivered Through Lentiviral Vector. **Mol Biotechnol. Mention volume: 1-11.**
5. Meshram C.D., Singh N.K., Sonwane A.A., Pawar S.S., Mishra B.P., Chaturvedi V.K., Saini M., **Singh, R.P. and** Gupta P.K. (2013). Evaluation of single and dual siRNAs targeting rabies virus glycoprotein and nucleoprotein genes for inhibition of virus multiplication in vitro. **Arch Virol. Mention volume,** 158(11):2323-32**.**
6. Kumar M., **Singh, R.P.**, Bina Mishra, Singh R., Reddy G.B.M., Patel A., Saravanan R. and Gupta P.K. (2014). Development of Alternative Approaches for In–Process Quality Control of Rabies Vaccine. **Advances in Animal and Veterinary Sciences,** 2 (3): 164-170.
7. Paldurai A., **Singh, R.P.**, Gupta P.K., Sharma B. and Pandey K.D. (2014). Growth Kinetics of Rabies Virus in BHK-21 Cells Using Fluorescent Activated Cell 02 Sorter (FACS) Analysis and a Monoclonal Antibody Based Cell-ELISA. **J Immunol Vaccine Technol**. 1(1): 103.
8. Patel A.C, Upmanyu V., Ramasamy S., Gupta P.K., Singh R. and **Singh, R.P. (2015).** Molecular and immunogenic characterization of BHK-21 cell line adapted CVS-11 strain of rabies virus and future prospect in vaccination strategy**. Virus Disease,** 26:288–296.
9. Cherian S., Singh R., Singh K.P., Reddy G.B. Manjunatha, G.V.P.P.S. Ravikumar Anjaneya., Sumithra T.G. and **Singh, R.P.** (2015). Phylogenetic analysis of Indian rabies virus isolates targeting the complete Glycoprotein gene. **Infection, Genetics and Evolution**, 36: 333–338.
10. Sajjanar B., Saxena S., Bisht D., Singh A.K., Manjunatha Reddy G.B., Singh R. and **Singh, R.P.**, Kumar S. (2016). Effect of nicotinic acetylcholine receptor alpha 1 (nAChRα1) peptides on rabies virus infection in neuronal cells. **Neuropeptides,** 57:59-64.

Popular Articles, Book Chapters, Technical Articles, Technical Buletins

1. **Singh, R.P.** and Patel A. (2014). Rabies. In Sudhi Ranjan Garg (Eds.). Zoonoses: Viral, Rickettsial and Prion Diseases, pp 35-46, Daya Publishing House, New Delhi.
2. **Singh, R.P.** (2009). Rabies Vaccine and its Production: An Overview. In Diagnosis and Prophylaxis of Economically Important Diseases of Farm animals and Poultry, Edited by R. Somvanshi, pp.113-118.

Goatpox & Sheeppox

Resaerch Publications

1. **Singh, R.P.**, Tiwari, A. K., and Negi, B. S. (1998). Evaluation of hyper immune sera against goat pox viral antigens. **Tropical Animal Health and Production 30 (4):** 229-232.
2. Tiwari, A. K., Neigh, B. S., Manna, S. K. and **Singh, R. P.** (1998). Efficacy of Indirect-ELISA compared to other serological tests for goat-pox antigen detection. **Indian Journal of Animal Sciences 68(7):** 632-633.
3. Chaudhary, S.S., Pandey, K. D., **Singh, R. P**., Verma, P. C., and Gupta, P. K. (2009). A Vero cell derived combined vaccine against sheep pox and peste des petits ruminants for sheep. **Vaccine 27**: 2548-2553.

Reports

SOP: A process for preparation of combined PPR-Sheep Pox Vaccine in the year 2009

Blue tongue

Resaerch Publication

1. Umeshappa, C.K., Singh K.P., Pandey, A.B., **Singh, R.P.** and Nanjundappa R.H. (2010). Cell-mediated immune response and cross-protective efficacy of binary ethyleneimine-inactivated bluetongue virus serotype-1 vaccine in sheep. **Vaccine** 28: 2522-2531.

Canine Distemper Virus (CDV)

Research Publications

1. Bhatt M., Rajak K.K., Chakravarti S., Yadav A.K., Kumar A., Gupta V., Chander V., Mathesh K., Chandramohan S., Sharma A.K., Mahendran K., Sankar M., Muthuchelvan D., Gandham R.K., Baig M., **Singh, R.P.** and Singh R.K**. (2019).** Phylogenetic analysis of haemagglutinin gene deciphering a new genetically distinct lineage of canine distemper virus circulating among domestic dogs in India. **Transboundary Emerging infectious Diseases,** 66(3):1252-1267.
2. Yadav Ajay Kumar., Rajak Kaushal Kishor., Bhatt Mukesh., Kumar Ashok., Chakravarti Soumendu., Sankar Muthu., Muthuchelvan Dhanavelu., Kumar Ravi., Khulape Sagar., **Singh, R. P.** and Singh Raj Kumar. (2019). Comparative sequence analysis of morbillivirus receptors and its implication in host range expansion. **Canadian Journal of Microbiology,** 65(11):783-794.
3. Ajay KumarYadav, Kaushal KishorRajak, AshokKumar. MukeshBhatt,SoumenduChakravarti, SankarMuthu, Z.B.Dubal, SagarKhulape, Raja WasimYousuf, VishalRai, BabluKumar, DhanaveluMuthuchelvan, Praveen KumarGupta, **Singh, R.P.**, Rajkumar Singh(2021). Replication competence of canine distemper virus in cell lines expressing signaling lymphocyte activation molecule (SLAM) of goat, sheep and dog origin. **Microbial Pathogenesis** 156, 104940.
4. Monu Karki, Dr. KK Rajak, Praveen Singh, Arfa Fayaz, Kiran, Ajay Kumar Yadav, Mukesh Bhatt, Vishal Rai, Chris Einstein and **RP Singh**. (2022) Optimization of competitive lateral flow assay for detection of canine distemper virus antibody. **The Pharma Innovation Journal**. 2022; 11(4S): 1568-1572
5. Fayaz A, Rajak KK, Kumar A, Karki M, Kiran, Rai V, Bhatt M, **Singh RP.** (2022).Development and characterization of mouse monoclonal antibodies to canine morbillivirus. **Biologicals**, 79: 19-26.

6. Karki M, Rajak KK, **Singh RP**. Canine morbillivirus (CDV): a review on current status, emergence and the diagnostics. **Virusdisease.** 2022 Sep;33(3):309-321.

Brucella

Research Publications

1. Das A., Kumar B., Chakravarti S., Prakash C., **Singh, R.P.** Gupta V., Singh K.P., Agrawal R.K., Chaturvedi V.K., Abhishek. And Shrinet, G. **(2018).** Rapid visual isothermal nucleic acid-based detection assay of Brucella species by polymerase spiral reaction. **J Appl Microbiol**. 125 (3), 646-654.
2. Singh D.K., Kumar B., Shrinet G., **Singh, R.P.**, Das A., Mantur B.G., Abhishek., Pandey A., Mondal P., Sajjanar B.K., Doimari S., Singh V., Kumari R., Tiwari A.K. and Gandham R.K. (2018). Draft genome sequence of field isolate Brucella melitensis strain 2007BM/1 from India. **Journal of Global Antimicrobial Resistance** 13, 152-153.
3. C Prakash, B Kumar, **Singh, R.P.,** P Singh, G Shrinet, A Das, M Ashmi (2021). Development and evaluation of a gold nanoparticle based Lateral Flow assay (LFA) strip test for detection of Brucella spp. **Journal of Microbiological Methods** 184, 106185

Miscellaneous

Research Publications

1. Singh Mahavir., Siddiqui Mahatab Z. and **Singh, R.P.** (2002). Intraspecies mice hybridomas against recombinant protein of Mycobacterium avium paratuberculosis. **Journal of Applied Animal Research,** 22: 137-144.
2. Kumar V., **Singh, R.P.,** Kumar S., Agarwal A., Singh P. (2012). Bioconjugation and Characterization of Fe_3O_4 Magnetic Nanoparticles for Immunoassay Application. **Advanced Science Letters**, 18 (5): 99-103.
3. Nongsiej J., Singh S.K., Sharma G.C., Rakesh H.B., **Singh, R.P.** and Agarwal S.K. (2013). Freezing of endometrial epithelial cells of buffalo cultured in-vitro. **Indian Journal of Animal Science** (7), 742-743.
4. Chethan S.G., Singh S.K., Nongsiej J., Rakesh H.B., **Singh, R.P.**, Kumar N. and Agarwal S.K. (2014). IFN-τ Acts in a Dose-Dependent Manner on Prostaglandin Production by Buffalo Endometrial Stromal Cells Cultured in vitro. **Reproduction in Domestic Animals,** 49 (3), 403-408.

Popular Articles, Book Chapters, Technical Articles, Technical Bulletins

1. Sharama M.C., Rao J.R, Dutt Triveni, Kumar Punnet, **Singh, R.P.,** Tiwari Rupasi and Srivasatava Rahul. (2010). Technology Profile for Commercialization, ICAR North Zone-II, Volume-1.

2. **Singh, R.P.** (2011). Cell culture Technique: an Overview. Book Chapter in Advances in Reproductive Technologies to Augment Fertility in Farm Animals, Edited by S.K.Singh, S.K.Ghosh, H.Kumar, S.K.Agarwal. pp.111-117
3. **Singh, R.P.,** Pragya Aparimita, Shyam narayan Gupata, (2011), Importance of IPR Issues in Current Research Scenario. Book Chapter in Theraputic Applications of Stem Cells in Livestock Edited by. G.Taru Shrama, M.Sarkar. S. Bag, B.C. Das. pp. 165-168.
4. Singh Praveen., **Singh, R.P.**, Kumar Satish., Onodera T., Singh V.P and Rajak K.K. (2012). Development of SPR-Optical Biosensors for Detection of PPR Virus: In Book 'Recent Topics in Plant, Medical and Animal Virology' edited by YPS Malik, AB Pandey and B Pattnaik, pp. 135-136.
5. **Singh, R.P.**, Kumar Bablu., Singh S.K., Gandhi Sagarika., Nema Achyut., Singh Kultaj., and Shazee Malik. (2020). Launching Innovators in Animal Science Sector. Startup catalogue 2019-20.
6. **Singh, R.P.**, Kumar Bablu and Singh S.K. (2020). Nurturing Entrepreneurial Ecosystem through Agribusiness Incubation Activities in Livestock Sector. Indian Farming 70(01): 30-32.
7. BN Tripathi, **RP Singh**, AK Tiwari, G Saikumar, GVPPS Ravi Kumar, Yash Pal, BR Gulati, BR Shome, VP Singh, Jyoti Misri, Triveni Dutt and Ashok Kumar (2022). Achievements in Animal Health Management in Independent India. Editors Pathak H, Mishra JP and Mohapatra T (2022) Indian Agriculture after Independence. Indian Council of Agricultural Research, New Delhi 110 001, pp 426. ISBN: 978-81-7164-256-4

Awards/Recognitions/Official Appreciations

1990 -"University Bronze Medal" for Securing III Highest Rank in B.V.Sc. & A.H.

2001 -"**One-Time Award**" of ICAR with cash prize of INR 2,00,000 for developing monoclonal antibody based Competitive-ELISA kit for Rinderpest sero-surveillance (A team award)

2001 - "**Award of merit**" from the Director of Indian Veterinary Research Institute, Izatnagar in recognition of meritorious contribution in Veterinary Science.

2003 - Jawaharlal Nehru Award" for the Best P.G. Agricultural Research (Ph.D. thesis in the Field of Animal Biotechnology)-Indian Council of Agricultural Research (ICAR)

2006 - "**Dr. C. M. Singh-**2002" Award for the best Ph.D. thesis of Deemed University IVRI, Izatnagar.

2006 - "**Dr. D. R. Uppal**" Award-2001/2002 for the best Ph.D. thesis of Deemed University IVRI, Izatnagar.

2011 - "**Award of Honour**" by Director, Indian Veterinary Research Institute in the year 2011 for significant contribution in extension/ up-liftment /management activities of the Institute.

2013 - "Khorana Technology Transfer Course Award": IUSSTF & University of Wisconsin, USA funded by DBT.

2017 - Till date - PPR Global Eradication Programme: **Member, Advisory Committee**, (FAO of UN &OIE).

2018 - Member, PPR National Strategic Plan, Govt. of India

2019 - Member, Rinderpest Contigency Plan, Post eradication Era, GoI
2020 - Member, OIE *Ad hoc* group on Rinderpest (World Organization for Animal Health./OIE)
2022-Member, Partnering & Financing Panel (PFP) of GF-TADs (FAO-WOAH/OIE).

Patents Filed

1. Patent application No. 485/DEL/2001 entitled "**A modified method for production and quality control of *peste des petits ruminants* (PPR) vaccine**"
2. Patent application number 2237/DEL/2013, 29.07.2013 entitled "**Development of Peste des Petits Ruminants (PPR) negative Marker vaccine candidate using a virus neutralizing monoclonal antibody**" (ICAR as applicant).
3. Patent application number 202111013086 entitled "**A novel Peste des Petits Ruminants (PPR) viral vector based on the Indian Vaccine strain Sungri/96"**
4. Patent application number 202011057169, Dated 30.12.2020 entitled "**Development of Vero-cell based live attenuated vaccine candidate virus for Canine Distemper using Indigenous strain".**
5. Patent application no 202211031732 dated 02.06.2022 entitled **"Development of monoclonal antibody (mAb) based competitive ELISA for the detection of canine distemper virus (CDV) antibody".**
6. Patent application no 202211067069 dated 22.11.2022 entitled **"Live attenuated FMDV serotype O Ind R2/1975 negative marker vaccine strain".**

Technologies developed and in field application

S. No.	Technologies	Details of application	Reference
1.	**Monoclonal antibody based competitive-ELISA kit for rinderpest sero-surveillance**	The kit was approved by World Reference Laboratory of Rinderpest, Pirbright, U.K. Contributed Immensely during Final stage of National Rinderpest eradication programme in India. It saved a lot of foreign exchange due to stoppage of Imported kit from BDSL, UK. Team was awarded **INR 2,00,000/- cash award** by Union Minister of Agriculture in the year 2001.	**Singh, R.P.,** Sreenivasa, B.P., Dhar, P., Roy, R.N. and Bandyopadhyay, S.K. (2000). Development of a monoclonal antibody based Competitive ELISA for the detection of Rinderpest antibodies. **Rev.sci.tech.Off.int.Epiz**., **19 (3).** 754-763.

2.	**A Monoclonal antibody based competitive-ELISA kit for PPR antibody detection**	Extensively used under field conditions in India for the sero-surveillance and sero-monitoring of PPR antibodies since 2002. Status of PPR antibody prevalence at large became possible only with this kit.	**Singh, R.P.,** Sreenivasa, B.P., Dhar, P, Shah, L.C., Babdyopadhyay, S.K., (2004). Development of Monoclonal antibody based competitive- ELISA for detection and titration of antibodies to *peste des petits ruminants* virus. **Veterinary Microbiology, 98:** 3-15.
3.	**A Monoclonal antibody based sandwich-ELISA kit for PPR diagnosis (antigen detection)**	Extensively used under field conditions in India for the clinical diagnosis and clinical surveillance since 2002. Large scale prevalence of PPR became evident with the help of this kit only.	**Singh R.P.,** Sreenivasa B.P., Dhar P. & Bandyopadhyay S.K. (2004). A sandwich ELISA for the diagnosis of *peste des petits ruminants* (PPR) infection in small ruminants using anti-nucleocapsid protein monoclonal antibody. **Archives of Virology, 149** (11): 2155-2170.
4.	**Live-attenuated homologous vaccine for *peste des petits ruminants* (PPR)**	Being used under mass vaccination campaigns to control PPR. Technology has been transferred to eight Industrial units/ Government Units within India. 1. M/S Indian Immunologicals Limited, Hyderabad (Rs. 25 Lakhs, 5% Royalty). 2. M/S Intervet, India Pvt Limited, Pune (Rs.30 Lakhs, 5 % Royalty). 3. M/S Hester, Biosciences, Ahmadabad (Rs. 23 Lakhs, 3.5% Royalty). 4. M/S Brilliant Bio-Pharma Private Limited, Hyderabad (Rs. 25 Lakhs, 5% Royalty) 5. M/S Biomed Private Limited, Ghaziabad, (Rs.25 Lakhs, 5% Royalty) 6. M/S IAH&VB, Bangalore, Karnataka (Rs 25 Lakhs, 3.5% Royalty) 7. M/S IAH&VB, Palode, Kerala (Rs 25 Lakhs, 3.5% Royalty) 8. Telangana State Veterinary Biological Production and Research Institute (Rs 25 Lakhs, 3.5% Royalty)	Patent application No. **485/DEL/2001** entitled "A modified method for production and quality control of *peste des petits ruminants* (PPR) vaccine"
5.	**Vero cell-based sheep pox vaccine**	The technology has been transferred to Institute of Animal Health and Veterinary Biological, Karnataka at a cost of Rs. 10 Lakhs.	Chaudhary, S.S., Pandey, K. D., **Singh, R. P**., Verma, P. C., and Gupta, P. K. 2009. A Vero cell derived combined vaccine against sheep pox and peste des petits ruminants for sheep. **Vaccine 27**:

			2548-2553.
6.	**Virus Neutralizing Hybridoma clone against PPR virus Number 4B11**	This Hybridoma clone has been transferred to Intervet India Pvt Ltd at a cost of Rs. 5.0 Lakhs.	**Singh, R.P.,** Bandyopadhyay, S.K.**,** Sreenivasa, B.P. and Dhar, P. (2004). Production and Characterization of monoclonal antibodies to *peste des petits ruminants* (PPR) virus. **Veterinary Research Communications,** 28: 623-639.
In addition to above, some more technologies viz., PPR-LFA, Brucella Indirect-ELISA, Canine Distemper virus mAb based C-ELISA and CDV vaccine candidate have also been developed			

International Exposures

S. No.	City & Country visited	Duration	Name of Programmes	Organized By
1.	**Kyushu University Fucuokka Japan**	26.10.2010 to 03.11.2010 (9 Days)	Surface Plasmon Resonance (SPR) Technology for antigen-antibody interaction	Training under DST –JSPS Project
2.	**Nairobi, Kenya**	29.04.2013 to 30.04.2013 (2 Days)	II Global PPR Research Alliance (GPRA) Meeting	ILRI, Nairobi, Kenya
3.	**Madison, Wisconsin, USA**	20.07.2013 to 03.08.2013 (15 Days)	Khorana Program Technology Transfer Course-2013 Award, University of Wisconsin, USA	IUSSTF, DBT, University of Wisconsin, Madison, USA
4.	**Kathmandu, Nepal**	19.12.2013 to 20.12.2013 (2 Days)	"Second Regional Workshop on Progressive control of Peste des Petits Ruminants (PCP-PPR) for South Asian Countries"	FAO of United Nations
5.	**Rome, Italy**	08.10.204 to 10.10.2014 (3 Days)	Expert Workshop on developing a Global PPR Control and Eradication Strategy	FAO, Rome, Italy
6.	**Kathmandu, Nepal**	01.12.2014 to 03.12.2014 (3 Days)	Peste des Petits Ruminants (PPR) Vaccine Producers Workshop	FAO Head Quaters, Rome, Italy
7.	**Pirbright Institute, UK**	04.08.2016 to 08.08.2016 (5 Days)	Collaborative scientific discussion and Laboratory Visits (DBT-BBSRC-FADH, PPR Project)	Pirbright Institute
8.	**Paris, France**	29.06.2017 (1 Day)	Global PPR eradication program: Advisory Committee Meeting Launch	World Organizations of Animal Health (OIE) & FAO of United Nations

9.	**Rome, Italy**	11-12 December, 2017	Thermotolerant PPR Vaccines	FAO Head Quaters, Rome, Italy
10.	**Vienna, Austria**	17.04.2018 to 19.04.2018 (3 Days)	Peste des Petits Global Research and Expertise Network (PPR-GREN)	FAO -OIE & IAEA
11.	**Rome, Italy**	04.10.2018 to 05.10.2018 (2 Days)	Global Eradication Programme: Second Advisory Committee Meeting	FAO -OIE
12.	**Nairobi, Kenya**	16.07.2019 to 18.07.2019 (3 Days)	PPR Global Eradication Programme: III Advisory Committee meeting. AU-IBAR, Nairobi, Kenya	FAO -OIE & AU-IBAR
13.	**Lelystad,The Netherlands**	29.11.2023 to 01.12.2023	WOAH-FAO FMD Laboratory Network Meeting	Wageningen Bio Veterinary Research, Lelystad, The Netherlands.