



Dr. Rajib Deb, B.V.Sc., M.V.Sc., PhD
Scientist (Animal Biotechnology)

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Publications	Total no. of Research Paper	: 34
	Total no. of Books/Manual	: 10
	No. of patent granted (G) /filed (F)	: 0 (G) 5(F)
	Copyright granted (G) /filed (F)	: 0 (G) 2(F)
	Policy Document	: 0
Experience with research interest:		
<p>Dr Deb Has completed his M.V.Sc. and PhD. In the discipline of Animal Biotechnology from ICAR-Indian Veterinary Research Institute, Uttar Pradesh. He Served as scientist at ICAR-Central Institute for Research on Cattle, Meerut, UP from 2011-2019. Currently Dr Deb is working on development of diagnostics and vaccines for porcine infectious diseases. His area of research interest is to apply cutting edge molecular biology tools for improving livestock health and productivity.</p>		
Top 10 Publications:		
<ol style="list-style-type: none"> 1. Deb R., Sajjanar B., Singh U., Kumar S., Brahmane M .P., Singh R., Sengar G., Sharma A. (2013). Promoter variants at AP2 box region of Hsp70.1 affect thermal stress response and milk production traits in Frieswal cross bred cattle. <i>Gene</i>. 15; 532(2):230-5. 2. Deb R., Kumar S., Singh U., Tyagi S., Mandal D. K., Sengar G., Singh R., Kumar M., Sharma A. (2013). Evaluation of three bovine Y specific microsatellite loci as an alternative biomarkers for semen quality traits in crossbred bull. <i>Animal Reproduction Science</i>. 30; 142 (3-4):121-5. 3. Deb R., Sajjanar B., Singh U., Kumar S., Singh R., Sengar G., Sharma A. (2014). Effect of heat stress on the expression profile of Hsp90 among Sahiwal (<i>Bosindicus</i>) and Frieswal (<i>Bosindicus X Bostaurus</i>) breed of cattle: A comparative study. <i>Gene</i>. 25; 536 (2):435-40. 4. Singh R., Deb R., Singh U., Alex R., Kumar S., Chakraborti S., Sharma S., Sengar S., Singh R. (2014). Development of a tetra-primer ARMS PCR-based assay for detection of a novel single-nucleotide polymorphism in the 5' untranslated region of the bovine ITGB6 receptor gene associated with foot-and-mouth disease susceptibility in cattle. <i>Archives of Virology</i>.159(12): 3385-3389. 5. Deb R., Sajjanar B., Singh U., Alex R., Raja T. V., Alyethodi R. R., Kumar S., Sengar G., Sharma S., Singh R., Prakash B. (2015). Understanding the mechanisms of ATPase beta family genes for cellular thermo-tolerance in crossbred bulls, <i>International Journal of Biometrology</i>,59:1783-1789. 6. Deb R., Sengar G. S., Singh U., Kumar S., Alyethodi R. R., Alex R., Raja T.V., Das A. K., Prakash B. (2016). Application of a loop-mediated isothermal amplification assay for rapid detection of cow components adulterated in buffalo milk/meat. <i>Molecular</i> 		

Biotechnology.58:850-860.

7. Sengar G.S., Deb R., Singh U., Junghare V., Hazra S., Raja T.V., Alex R., Kumar A., Alyethodi R.R., Kant R., Jakshara S., Joshi C. G. (2018). Identification of differentially expressed microRNAs in Sahiwal (*Bosindicus*) breed of cattle during thermal stress. *Cell Stress and Chaperones*. 23(5):1019-1032.
8. Singh I., Deb R., Kumar S., Singh R., Andonissamy J., Smita S., Sengar G.S., Kumar R., Ojha K.K, Sahoo N.R and Chandran R. (2019). Deciphering Foot-and-Mouth Disease (FMD) virus-host Tropism. *Journal of Biomolecular Structure and Dynamics*. 18:1-13.
9. Sengar G.S., Kant R., Deb R. and Verma P. (2018). Small interfering RNA based knock down of acute heat shock and or GGA inducible bovine heat shock protein 70 may interfere invitro expression pattern of TLR2/4 and NOD1/2. *Journal of Thermal Biology*. 77:75-85.
10. Deb R., Sengar G.S., Junghare V., Hazra S., Singh U., Alex R., Kumar A.. (2020). Characterization of a putative ribosome binding site at the 5' untranslated region of bovine heat shock protein 90. *Molecular Biology Reports* .doi.10.1007/s11033-020-05768-x.

Technologies developed:

1. Development of a rapid user friendly single tube PCR based tool for detection of bovine leukocyte adhesion deficiency (BLAD) carrier in cattle (Indian Patent filed with application number 1073/DEL/2015. *The Patent Office Journal* 34/2017, Page No: 27763)
2. A Color based assay for differentiating cow vs goat milk/meat (Indian Patent filed with application number 1901/DEL/2015 A. *The Patent Office Journal* 45/2017, Page No: 39817)
3. Development of an in-house built LAMP assay for rapid detection of cow components adulterated in buffalo milk/meat (Indian Patent filed with application number 3870/DEL/2015. *The Patent Office Journal* 31/03/2017, Page No: 8096)
4. Development of tetra primer displacement PCR assay for detection of complex vertebral malformation in cattle (Indian patent filed with application number (201611034916. *The Patent Office Journal* no. 15/2018, dated 13/04/2018, Page No: 13461)
5. Identification of functional Internal Ribosomal Entry Sites (IRES) at bovine heat shock protein 90 (Indian Patent filed with application number 201711042562. *The Patent Office Journal* no. 02/2019, dated 11/01/2019, Page No: 1129)
6. Kit for differentiating cow and camel milk (Indian Patent filed with application number 201911031389)
7. A single step nucleic acid based diagnostic for simultaneous detection of Nucleocapsid (N), Matrix (M) and Glycoprotein5 (Orf5) genes of Porcine Reproductive And Respiratory Syndrome (PRRS) virus infection in pigs (Indian Patent filed with application number 202011004699)
8. Developed Frieswal crossbred cattle variety (Trademark on "Frieswal was filed with application number 4361504, dated 28.11.2019. *Trade Marks Journal* No: 1935, 06/01/2020 Class 31. Page no 3428)
9. IT tools: Mobile apps (COOWLER; African Swine Fever in Hindi)

Awards:

National Merit Scholarship during Graduation; ICAR JRF (M.V.Sc.); ICAR SRF (PhD); CSIR NET qualified; TWAS Fellowship, Italy; DST Travel Grant; NAAS Associate; NASI Member; NAVS Associate; NABS Associate Fellow; Young Investigator Award (Brazil); Young Scientist Award (India); Gold medal award from Academy of Animal Science Welfare (India); Elsevier Outstanding Reviewer Award; Publon's Global Peer Review Award (NCBI) 2018; SERB, DST Young Scientist Scheme Award

Membership of professional society:

- National Environmental Science Academy, India
- National Academy of Biological Sciences, India
- Society for Technology Management (STEM), Hyderabad, India
- Indian Society of Veterinary Immunology and Biotechnology, Tamilnadu, India
- Asian Chemical Society, Rajasthan, India

- Society for Conservation of Domestic Animals (SOCDAB), ICAR-NBAGR, Karnal, India