

Year 2015-2016

Title: Pen side test for diagnosis of Hemorrhagic septicemia and Peste des petits ruminants virus

RKVY Scheme no. (4032 C (g) ABT-80A (RKVY)

Total budget: 20.00 lakhs

Some salient achievements are shown below:

**Development and deployment of pen side tests for diagnosis of Hemorrhagic septicemia and Peste des petits ruminants virus**  
Project proposal submitted to RKVY 2015

**PI: Dr. Sushila Maan**  
Principal Scientist  
Department of Animal Biotechnology, LUVAS, Hisar.

**CO-PIs:**  
Dr. Ajit Singh  
Dr. N.K. Mahajan  
Dr. N.S. Maan  
Dr. Aman Kumar

**Development of RT-LAMP assay for PPRV**


**Fig. 4. Electropherogram**  
Lane 1-1Kb Ladder, 2-neg. cont, 3-pprv(+), 4-FMD, 5-+C, 6-BTV

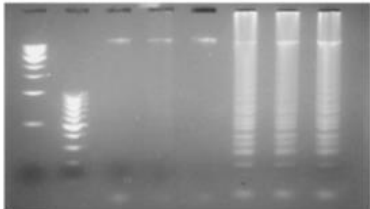
**Fig. 5. Electropherogram of RT-LAMP Amplified product**

**Fig. 6. Electropherogram of RT-PCR Amplified product**  
Deptt of ABT, LUVAS Hisar

**Fig. 7. RT-qPCR analysis**

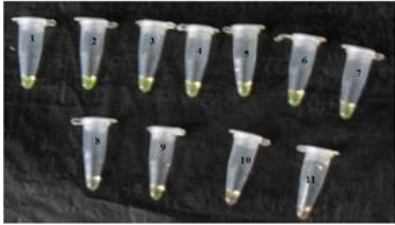
## LAMP assay for *P. multocida* (causative agent of HS)






Ladder like pattern in 1% AGE showing positive LAMP reaction

Under day light



Picogreen dye detection method

Under U.V. light



Picogreen dye detection method

## Publications coming out of different RKVY projects



Author's Personal Copy  
Journal of Virological Methods 204 (2016) 1–14

Contents lists available at ScienceDirect

Journal of Virological Methods

journal homepage: [www.elsevier.com/locate/jviromet](http://www.elsevier.com/locate/jviromet)

**Reverse transcription loop-mediated isothermal amplification assays for rapid identification of eastern and western strains of bluetongue virus in India**

S. Maan<sup>a,\*</sup>, N.S. Maan<sup>a,1</sup>, K. Batra<sup>a</sup>, A. Kumar<sup>a</sup>, A. Gupta<sup>a</sup>, Panduranga P. Rao<sup>b</sup>, Divakar Herwadri<sup>c</sup>, Vella Narasimha Reddy<sup>d</sup>, M. Guimera<sup>e</sup>, M.N. Belaganahalli<sup>f</sup>, P.P.C. Mertens<sup>g</sup>

<sup>a</sup> Department of Animal Biotechnology, College of Veterinary Sciences, UAF University of Veterinary and Animal Sciences, Hebbal, Hyderabad, India  
<sup>b</sup> IIS Hyderabad, Genome Valley Hyderabad, 500 075, India  
<sup>c</sup> National Institute of Veterinary Epidemiology and Disease Informatics (NIHEDI), Hebbal, Bangalore 560024 K.A. India  
<sup>d</sup> College of Veterinary Science, Andhra K.V. Sangha Regional University, Marandah Nagar, Hyderabad 500 075, India  
<sup>e</sup> The Inter Sectoral Bluetongue Programme, The Pirbright Institute, Pirbright, Woking GU24 0NF Surrey, United Kingdom  
<sup>f</sup> Biosensor Family, Department of Animal Biotechnology, College of Veterinary Sciences, UAF University of Veterinary and Animal Sciences, Hebbal, Hyderabad, India




**Genome Sequence of Bluetongue Virus Type 2 from India: Evidence for Reassortment between Outer Capsid Protein Genes**

Sushila Maan<sup>a,b</sup>, Narendar S. Maan<sup>a,b</sup>, Mangaratha N. Belaganahalli<sup>c</sup>, Aman Kumar<sup>d</sup>, Kamble Batra<sup>e</sup>, Pawanjit Panduranga Rao<sup>f</sup>, Divakar Herwadri<sup>g</sup>, Vella Narasimha Reddy<sup>h</sup>, Ananya Praty<sup>i</sup>, Yashrajit Krishnaiah<sup>j,k</sup>, G. Hanumanth Reddy<sup>l</sup>, Karan Pal Singh<sup>m</sup>, Nagendra R. Harghe<sup>n</sup>, Rytarikki Nandhini<sup>o</sup>, Daggupati Srinivasrao<sup>p</sup>, Peter P. C. Mertens<sup>q</sup>

<sup>a</sup> Vector Borne Disease Programme, The Pirbright Institute, Pirbright, Woking, Surrey, United Kingdom<sup>b</sup> College of Veterinary Sciences, UAF University of Veterinary and Animal Sciences, Hebbal, Hyderabad, India<sup>c</sup> Centre for Animal Disease Research and Diagnosis, Pathology Laboratory, Indian Veterinary Research Institute, Izatnagar, India<sup>d</sup> The Broadband, Genome Valley Hyderabad, Hyderabad, India<sup>e</sup> National Institute of Veterinary Epidemiology and Disease Informatics (NIHEDI), Hebbal, Bangalore, Karnataka, India<sup>f</sup> College of Veterinary Science, Sri Venkateswara Veterinary University, Hyderabad, Telangana, India<sup>g</sup> Veterinary Biotech & Research Institute, Government of Andhra Pradesh, Hyderabad, Telangana, India<sup>h</sup> College of Veterinary Science, Sri Venkateswara Veterinary University, Singapur, Andhra Pradesh, India<sup>i</sup>

## Publications coming out of different RKVY projects

Veterinary World, EISSN: 2231-0916  
Available at [www.veterinaryworld.org/Vol.8/November-2015/3.pdf](http://www.veterinaryworld.org/Vol.8/November-2015/3.pdf) RESEARCH ARTICLE  
Open Access

**Development and evaluation of loop-mediated isothermal amplification assay for rapid detection of *Capripoxvirus***

Kaniisht Batra<sup>1</sup>, Aman Kumar<sup>1</sup>, Vinay Kumar<sup>1</sup>, Trilok Nanda<sup>1</sup>, Narender S Maan<sup>2</sup> and Sushila Maan<sup>3</sup>

1. Department of Animal Biotechnology, College of Veterinary Sciences, LLR University of Veterinary and Animal Sciences, Hisar, Haryana, India. 2. Resource Faculty, Department of Animal Biotechnology, College of Veterinary Sciences, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana, India.  
Corresponding author: Sushila Maan, e-mail: [sushilamaan105@gmail.com](mailto:sushilamaan105@gmail.com),  
KB: [drkanishtbatra@gmail.com](mailto:drkanishtbatra@gmail.com), AK: [amankumar34237@gmail.com](mailto:amankumar34237@gmail.com), VK: [2008v606@gmail.com](mailto:2008v606@gmail.com),  
TN: [nandatrilok@rediffmail.com](mailto:nandatrilok@rediffmail.com), NSM: [narendermaan108@gmail.com](mailto:narendermaan108@gmail.com)  
Received: 20-07-2015, Revised: 19-09-2015, Accepted: 30-09-2015, Published online: 05-11-2015

doi: 10.14202/vetworld.2015.1286-1292 **How to cite this article:** Batra K, Kumar A, Kumar V, Nanda T, Maan NS, Maan S (2015) Development and evaluation of loop-mediated isothermal amplification assay for rapid detection of *Capripoxvirus*. *Veterinary World* 8(11): 1286-1292.

---

*Haryana Vet* (Dec, 2015) 54(2), 99-102

Research Article

**DEVELOPMENT OF REAL TIME PCR ASSAY FOR DIAGNOSIS OF BRUCELLA SPP.**

VINAY KUMAR, AMAN KUMAR, ASHIS DEBNATH, KANISH BATRA, NITISH BANSAL, AKHIL K. GUPTA, ANU TIWARI and SUSHILA MAAN\*

Department of Animal Biotechnology, College of Veterinary Sciences  
Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125 004, India  
Received: 04/07/2015; Accepted: 13/11/2015

*Haryana Vet* (June, 2016) 55 (1), 93-96


Research Article

**MOLECULAR SCREENING OF CROSSBRED COW BULLS FOR IMPORTANT GENETIC DISORDERS**

ASHIS DEBNATH, AMAN KUMAR\*, SUSHILA MAAN, VINAY KUMAR, VINAY G. JOSHI, TRILOK NANDA and M.L. SANGWAN

Department of Animal Biotechnology, College of Veterinary Sciences, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, 125 004, India  
Received: 26.6.2015; Accepted: 25.03.2016

---



Proceedings of the National Academy of Sciences, India Section B: Biological Sciences  
pp 1-8

**Development of Loop-Mediated Isothermal Amplification Assay Based on 6b Gene Sequence for Rapid Detection of *Pasteurella multocida* B;2**

\* Rajat Vashistha  
\* Ajit Singh  
\* Anshika Sharma

*Research Journal of Biotechnology* Vol. 11 (2) February (2016)  
Res. J. Biotech

**Development of Real time PCR for Diagnosis of *Capripoxviruses***

Batra Kanishk<sup>1</sup>, Kumar Aman<sup>1</sup>, Maan S. Narender<sup>1</sup>, Ghosh Arnab<sup>1</sup>, Sunayna<sup>1</sup>, Kumar Naveen<sup>1</sup> and Maan Sushila<sup>1\*</sup>

1. Department of Animal Biotechnology, College of Veterinary Sciences, LLR University of Veterinary and Animal Sciences, Hisar, 125 004, Haryana, INDIA  
2. Department of Animal Biotechnology (Resource faculty), College of Veterinary Sciences, LLR University of Veterinary and Animal Sciences, Hisar, 125 004, Haryana, INDIA  
3. Veterinary Type Culture Collection, ICAR-NRC on Equines Sirohi Road, Hisar, 125 001, Haryana, INDIA  
\*sushilamaan105@gmail.com

### Technology and facilities developed:

Physical targets	Achievements
1. Development, validation and deployment of pen side assays for HS and PPRV	Developed the assays and validation is ongoing.

### Beneficiaries:

1. Livestock farmers of different communities.
2. State Animal Husbandry Department.

3