






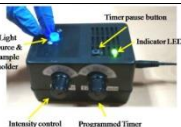




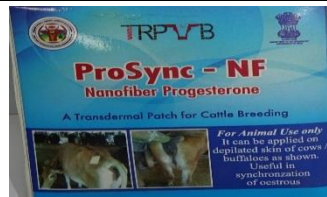


### Details of Key Technologies/Products/Processes Developed by the Support of DBT and Transferred to Industry



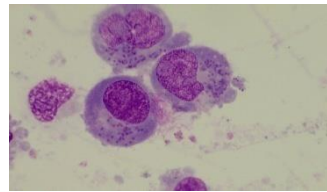
SN.	Organization	Name of the Product	Description of Product & Utility	Industry whom Technology transferred	Images of technology/Product
1.	Central Institute for Research on Buffaloes (CIRB)-Hisar, Haryana	Preg-D Pregnancy Diagnosis Kit	The Preg-D kit, the prototype of a urine based novel technique for pregnancy diagnosis in dairy animals has been developed with support of DBT at the ICAR-Central Institute for Research on Buffaloes, Hisar. This innovative kit employs a thermophilic biochemical reaction to detect metabolites, resulting in the formation of a coloured precipitated compound in positive cases. The kit will preliminarily diagnose the pregnancy as early as day 18-25 in bovines. It does not require any instrumentation and results can be interpreted by naked eye as well as the kit is non-invasive, cost-effectiveness, user-friendly and animal-friendly. The kit is a very effective alternate method for identifying non-pregnant animals in the herd.	M/s. TechInvention Lifecare Pvt. Ltd. Mumbai	
2.	Indian Veterinary Research Institute (IVRI)-Bareilly, UP	Subviral Particle Based Infectious Bursal Disease Vaccine (Gumboro disease)	Infectious bursal disease, also known as Gumboro disease, is a highly contagious disease of young chickens and turkeys caused by infectious bursal disease virus (IBDV). The IBDV major capsid protein VP2 on expression in yeast, <i>Saccharomyces cerevisiae</i> , led to the formation of subviral particles (SVPs). The generated SVPs, in addition to their ability to stimulate antibody response, are highly effective in stimulating antigen specific lymphocyte proliferative and cytotoxic T lymphocyte responses. The SVP based vaccine protects the broiler birds in presence of maternally derived antibodies (MDA) and can safely be administered to day-old chicks. The efficacy of the SVPs against challenge with very virulent IBD virus has also been and the results indicated that the vaccinated flocks did not show any clinical signs indicating complete protection against IBDV.	M/s. Biosciences, Hester Ahmedabad	
3.	Indian Veterinary Research Institute (IVRI)-Bareilly, UP	Brucella abortus S19Δper Vaccine	A novel Brucella vaccine viz. <i>Brucella abortus</i> S19Δper vaccine has confirmed protection against virulent challenge in experimental mice model and in buffalo calves. The developed vaccine was also found to be DIVA compatible. <i>Brucella abortus</i> S19Δper vaccine can play an important role in National Brucellosis Control Programme.	M/s. Biosciences, Hester Ahmedabad	

4.	National Institute of Animal Biotechnology (NIAB), Hyderabad	Nanostructure d paper-kit comprising magnetic nanoparticle for rapid detection of subclinical and clinical mastitis	An early detection of mastitis at subclinical stage holds high prognostic value as starting the medication at an early stage leads to rapid cure of the condition. NIAB- Hyderabad has developed and validated a field level, affordable, farmer friendly quantitative method to diagnose intra-mammary infection as well as subclinical mastitis (Limit of visual detection: 25,000 cells/ml of milk). Further, a technology has also been developed to perform on-field anti-microbial sensitivity testing within 2 hours' time under field condition. Both the assays doesn't require any trained personnel for performing as well as interpreting the assay results and it can be performed at the door step and under field conditions. These technologies have been transferred to ACS Neoteric Technologies LLP Hyderabad for commercialization.	M/s ACS Neoteric Technologies LLP Hyderabad	
5.	National Institute of Animal Biotechnology (NIAB), Hyderabad	BRUDIVAT M-DIVA-capable, iELISA kit for bovine brucellosis	An indirect ELISA (iELISA) with Dps protein or peptide derived from Dps protein was developed which detects anti-Dps antibodies in Brucella-infected animals and humans. Further, the Dps-based iELISA can differentiate naturally infected cattle from Brucella abortus S19-vaccinated cattle (naturally infected cattle will be ELISA positive, whereas S19-vaccinated animals will be ELISA negative).	M/s Engrave Bio Labs Pvt. Ltd.	
6.	National Institute of Animal Biotechnology (NIAB), Hyderabad	Lateral flow assay for rapid screening of JEV in clinical samples	The technology is based on an antigen based lateral flow assay for rapid screening of Japanese Encephalitis Virus (JEV) in clinical serum samples. It provides a recombinant Japanese Encephalitis Virus (JEV) non-structural 1 (NS1) protein and its polyclonal antibody for development of cost-effective and a simple lateral flow assay to detect the presence of JEV in humans and animals. The technology has also undergone inter-lab and third-party validation for further confirmation of presence or absence of JEV in clinical serum samples. The sensitivity of the technology is 97.14%.	M/s. Paramcare Life Sciences Pvt. Ltd., Mumbai.	
7.	TRPVB, TANUVAS-Chennai	Quick Heal	Collagen based wound healing cream for wounds such as cracks in teats, chronic and deep wound, maggot wounds.	M/s Sihil Pharma Companion Health Division, Chennai	
8.	TRPVB, TANUVAS-Chennai	ABT Choice	The kit employs a novel concept of using a magnetic nanoparticle mediated entrapment of the bacteria and avoids pre-enrichment. Test results are read visually by colour change (colourless indicates resistance and blue colour sensitivity). Test results are available within 11 h and hence can be carried out at	M/s Genomix Molecular Diagnostics Private Limited, Hyderabad	

			field level on wide variety of clinical samples. The kit also provides flexibility in the choice of antibiotics.		
9.	TRPVB, TANUVAS- Chennai	Endomet B- PB	Endo Met-PB is also intended to treat mild and moderate case of endometritis in bovines. It is also advised for usage as a post insemination supplement. Results showed significant decrease in nature of vaginal discharge in mild and moderate cases and in white side test & significant reduction in leukocyte infiltration when evaluated on animals with different degrees of endometritis.	M/s Genomix Molecular Diagnostics Private Limited, Hyderabad	
10.	TRPVB, TANUVAS- Chennai	Bovine TB Alert	The OIE recommends use of sero diagnosis of BTB using bovine and avian protein purified derivatives in combination with TB specific proteins to increase specificity and sensitivity. TRPVB Bovine TB alert kit™ is a rapid immune-chromatographic test for TB antibody detection with defined bovine TB specific antigens and crude Mycobacterium specific proteins meant for use in BTB sero-diagnosis.	M/s Genomix Molecular Diagnostics Private Limited, Hyderabad	
11.	TRPVB, TANUVAS- Chennai	Nano NDV	Beta Cyclodextrin and calcium Phosphate coupled Newcastle Disease Virus used as a vaccine was better than the commercial vaccine when given oculonasally during the first two weeks post vaccination. The birds vaccinated with the above nano-NDV vaccine were completely protected against virulent NDV challenge. Beta Cyclodextrin-CaP-NDV delivery of vaccines is a potential method for enhancing the immune responses of existing commercial vaccines.	M/s Hester Biosciences, Ahmedabad	
12.	TRPVB, TANUVAS- Chennai	Bovine Mastitcure PGF	A freeze dried preparation of “bovine platelet lysate” (BPL) which can be used as an alternate complementary therapy for mastitis along with antibiotics. BPL accelerate healing of mammary gland parenchyma of mastitis affected animals as well as limits tissue damage, fibrosis and reduce mastitis recurrence rates.	M/s Hester Biosciences, Ahmedabad	
13.	TRPVB, TANUVAS- Chennai	Collagen Beads	Collagen beads were used to formulate a lentogenic-live New castle Disease vaccine for oral delivery. The bead preparation can be done at the farm by farmer using freeze dried commercial vaccine vial and collagen solution. The virus was viable in the collagen for more than 2 hrs at room temperature without any reduction in virus titer. The vaccine delivered through collagen beads elicits similar levels of HI titers compared to commercial vaccine.	M/s Hester Biosciences, Ahmedabad	

14.	TRPVB, TANUVAS-Chennai	Photolyser	A low-cost device, an indigenous alternate to a commercially available Photolyser.	M/s. Endhiram Innovations, Chennai	
15.	TRPVB, TANUVAS-Chennai	Portable Incubator	A low-cost device, as a supportive device for use in areas where the temperature is low (especially with the ABT choice kit)	M/s. Endhiram Innovations, Chennai	
16.	TRPVB, TANUVAS-Chennai	LAMP device	A low-cost battery-operated device. Enable performance of LAMP in field conditions	M/s. Endhiram Innovations, Chennai	
17.	TRPVB, TANUVAS-Chennai	CPV- VLP vaccine	Canine Parvoviral enteritis is one of the fatal diseases of dogs and many carnivores. The virus like particle based vaccine for CPV using baculovirus expression System (BEVS) was developed. The VLPs present authentic surface epitopes to immune cells, unlike sub-unit vaccines. The VLP purified proteins do not replicate the immunized animals unlike the conventional live virus vaccines.	M/s Palamur Biosciences, Hyderabad	
18.	TRPVB, TANUVAS-Chennai	CPV 2B	Low passage High titre vaccine developed for Canine Parvo enteritis in dogs. The virus was adopted in A72 cells and sub-cultured for 66 passages. The virus was up scaled at 45 <sup>th</sup> passage, freeze dried and characterized. CPV-2b modified live virus at 45 <sup>th</sup> passage was extensively characterized by performing the Heamagglutination Inhibition assay, monoclonal antibody based Immunofluorescent Cell staining method using Confocal microscope, and Polymerase chain reaction using CPV-2b specific primers. The vaccine was used in dogs and safety, efficacy was evaluated.	M/s Transcience Innovative technologies, Chennai	
19.	TRPVB, TANUVAS-Chennai	Progesterone Nanopatch	The Prosync – NF is a nanofiber patch which is administered to release progesterone in a controlled manner which results in induction of ovulatory heat within short time frame. It helps in synchronization of estrus cycle in bovines. Controlled smart release of progesterone from impregnated nanofibers results in induction of oestrus within 6-7 days post-application.	M/s Jeshron Biotech Solutions Pvt. Ltd, Chennai	



20.	TRPVB, TANUVAS- Chennai	Teat Protect	It is a unique germicidal teat protective spray for preventing mastitis. This gel works by preventing common mastitis causing bacteria from entering the teat canal and provides extended antimicrobial protection. A unique germicidal teat protective formulation which when sprayed after milking forms a protective physical and germicidal barrier. It helps to prevent common bacterial organisms known to cause mastitis from entering the teat canal and provides extended antimicrobial protection after spraying.	M/s Jeshron Biotech Solutions Pvt. Ltd, Chennai	
21.	TRPVB, TANUVAS- Chennai	TANUVAS SCC Count kit	A substrate based biochemical test method that detects the number of cells in the milk samples given an indirect value of somatic cells present in the milk by visualizing the color formation that can be compared with the color code provided with the kit. This field based test kit enables to farmer to check the status of the udder health and also in detecting sub-clinical mastitis if screened regularly	M/s Jeshron Biotech Solutions Pvt. Ltd, Chennai	
22.	TRPVB, TANUVAS- Chennai	Prosync - NC	The ProSync cream is tropically administered to release progesterone in a controlled manner which result in induction of ovulatory heat within 5-6 days It can be used for synchronization of estrus cycle in bovines. Number of beneficiaries: 75000	M/s Jeshron Biotech Solutions Pvt. Ltd, Chennai	
23.	TRPVB, TANUVAS- Chennai	Nano Methicone Lotion / Spray	Nano Methicon lotion is formulated especially for companion animals. The active compound, Dimethicone oil and poly herbals are encapsulated in nanoform to increase their stability and minimize the dosage. This lotion is useful for the control of external parasites (ticks and Lice) and this lotion provides relief of irritation from dermatosis, such as allergic contact dermatitis	M/s Jeshron Biotech Solutions Pvt. Ltd, Chennai	
24.	TRPVB, TANUVAS- Chennai	Lumpy Skin Disease Vaccine Strain	The LSDV laboratory strain was fully adapted to vero cells and completely characterized.	M/s. Biovet Pvt. Ltd. Bengaluru	 Vero cell adapted Lumpy skin disease virus strain for vaccine use © TRPVB
25.	TRPVB, TANUVAS- Chennai	<i>Theileria annulata</i> Vaccine Candidate and Challenge Strains	<i>T. annulata</i> strains T5815, T5914, T339 are the currently circulating <i>T. annulata</i> strains. The T5914 is a suspension culture and T5815 is an adherent cell line and had been passaged for >200 times and confirmed for its attenuation. The T3339 is a characterized challenge strain and useful in potency studies.	M/s. Hester biosciences Pvt Ltd, Ahmedabad	
26.	TRPVB, TANUVAS-	Multiplex PCR assay	PCR based assay for diagnosis of <i>T. evansi</i> , <i>B. gibsoni</i> , <i>B. canis</i> , <i>B. vogeli</i> , <i>A. platys</i> and <i>E. canis</i> . The PCR will helps in the	M/s Illumgene, Bengaluru	

	Chennai		clinician to select the appropriate therapeutic protocol in the case of large/ small babesia infecting canines and to determine the efficiency of the therapeutic approach being followed (based on the complete genome clearance)		
27.	CSIR-Central Leather Research Institute	Reconstituted collagen sheet (RCS)	A new process for conversion of the Achilles tendons of the bovine origin into reconstituted collagen sheet was developed and named as RCS which has the application in wound healing.	M/s Eucare Pharmaceutical Pvt. Ltd., Chennai.	