



# MedNews

If you want to know more...



## Esco Medical's Virtual Exhibit: A New IVF Conference Experience

With the uncertainty and limitations brought about by the on-going COVID-19 pandemic across the world, most (if not all) important gatherings have been cancelled. Conferences, congresses to various trainings and seminars have been put into hold and have greatly affected one transaction to another.

Esco Medical, however, is pleased to announce that despite these trying times, we came up with a great way to continuously involve our clients from around the globe and extend the reach of these missed events. In lieu of the cancellation of the ASPIRE (Asia Pacific Initiative on Reproduction) last April 2020 in Manila, Philippines, Esco Medical decided to come up with a web-based exhibit that

involves the creation of a virtual component instead of attending an actual event. This is a similar set-up that will happen in the upcoming ESHRE annual meeting this July.

This virtual exhibit will offer the customers a cost-effective alternative to an in-person event that carries numerous finances, time, and travel constraints (in this case, the corona virus pandemic). This particular exhibit will go live on the 1st week of July, 2020. Esco Medical, one of the leading manufacturers and innovators of high-quality equipment in the IVF industry is going to showcase the following equipment with sales personnel and specialists waiting to entertain your inquiries 24-hours a day for the duration of the exhibit. Just like an actual exhibit, participants can get a copy of brochure; make inquiries and attend a product presentation-demonstration from sales representatives through a video call.

## Inside Story



How IVF can be Valuable in the Conservation of Endangered Species



A Glimpse of Animal Embryo *In Vitro* Production in the Philippines



You have our support - operations of Esco China Medical team in COVID-19



In a Nutshell: IVF in the Time of COVID-19

*The children we bring into the world are small replicas of ourselves and our husbands; the pride and joy of grandfathers and grandmothers. We dream of being mothers, and for most of us that dreams are realised naturally. For this is the Miracle of Life.*

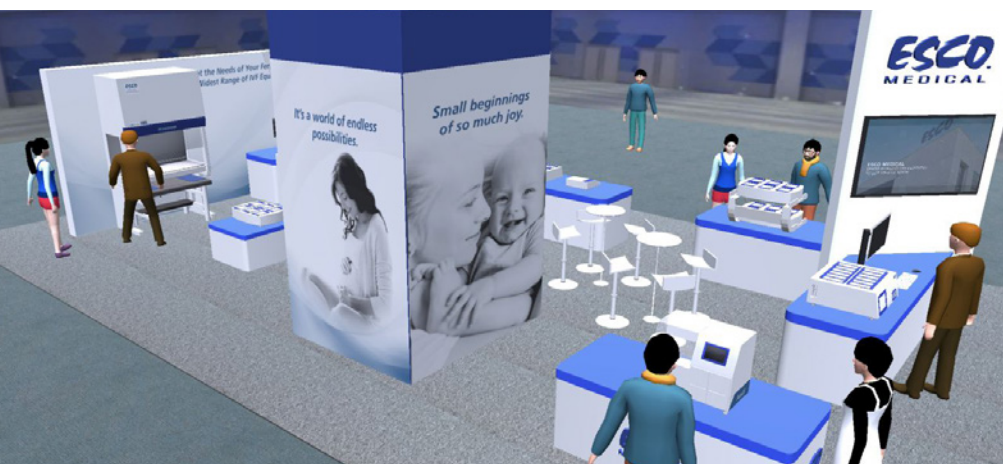


## ESHRE Update

The 36th European Society of Human Reproduction and Embryology (ESHRE) Annual Meeting is also going virtual. The 1st ESHRE Virtual Exhibit will take place online from 5 to 8 July 2020. This will allow ART professionals across the globe to participate while staying safe and convenient, in their own environment.

Esco Medical will once again take part in this important gathering wherein we will showcase some of our world-class, innovative IVF products.

**Join us!**



# How IVF can be Valuable in the Conservation of Endangered Species

During the past years, evident shifts in acceptance and usage of in vitro technologies have been observed. A notable number of laboratories are making the change to in vitro production as newer technologies emerge.

But what exactly are some benefits of in vitro fertilization as a reproductive tool?

**1** IVF can be used to produce offspring from selected animals that are perceived to be non-productive (eg. damaged reproductive system) when traditional methods are used.



**2** The selected animals can be frequently used as egg donors to which embryos produced are transferred into less valued animals as surrogates, and being able to produce offspring with desirable genetics.



**3** Less sperm cell is needed to inseminate the same number of eggs as fertilization takes place in a microscopic setting -- an obvious advantage when an uncommon, costly semen sample is used.



**4** IVF in animals can lessen dependence on the administration of hormones or ovulation-stimulating drugs.



With these benefits in mind, assisted reproductive technologies (ART) like IVF are suitable and valuable tools in the conservation of critically endangered species. Such technology has become a strategic element of modern environmental preservation struggles.



Esco Medical's wide range of innovative devices from its workstations to incubators, animal in-vitro production will be made easier and more convenient. Know more about our products at [www.esco-medical.com](http://www.esco-medical.com)



## A Glimpse of Animal Embryo *In Vitro* Production in the Philippines

Animal *in vitro* fertilization (IVF) has been practiced worldwide in the livestock industry for the production of genetically superior animals capitalizing the female contribution to genetic progress and in recent times, for conservation medicine. Shortening the interval to produce desired F1 generation instead of years of backcrossing and reducing risk of disease transmission; IVF has proven to be beneficial and more time-efficient for the animal industry. In the Philippines, the very first attempt to develop animal IVF started in year 1996. In year 2000, Dr. Danilda Hufana-Duran and her team at the Philippine Carabao Center (PCC) succeeded in developing the techniques of *in vitro* embryo production and cryopreservation that they were sent to India to produce river buffalo embryo for embryo transfer in the Philippines. The birth of the first river buffalo calves were demonstrated in 2002 after embryo transfer marking the success of this technology in the production of genetically superior animals using Assisted Reproductive Biotechnologies.

In 2004, the project titled "Production of River Buffalo (*Bubalus bubalis*) Calves by Embryo In Vitro Production-Vitrification and Transfer Techniques" was funded by DA-BAR and PDF of Sen. Ramon Magsaysay Jr where the team of Dr. Hufana-Duran continued the production of river buffalo embryos in India and transported it to the Philippines for embryo transfer to swamp buffalo recipients. River buffaloes are mainly used for milk and meat while swamp buffaloes (more commonly known as Philippine Carabao) are mainly used for drafting.

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In the study design to establish the success of the technology, the following were done:

- **Study 1** examined the viability of and normalcy of resultant calves from frozen river buffalo embryos.
- **Study 2** assessed the potential use of swamp buffaloes as surrogate mothers of river buffalo embryos
- **Study 3** evaluated the possibility of twinning using in vitro-produced vitrified embryos.

The results of the studies demonstrated above are as follows:

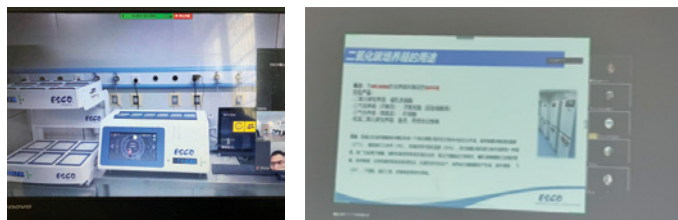
- **Study 1** with a sample size of 55 recipient animals, 9 got pregnant (16.36%) with a record of 3 abortions (5.45%), and 6 live births (10.9%).
- **Study 2** with 40 recipient swamp buffaloes, a pregnancy rate of 12.5% was obtained (5 pregnancies), a calving rate of 10% (4 live births) with 3 normal births, and 1 stillbirth.
- **Study 3** with 26 recipients evaluating possibility of twinning, yielded a 3.8% (1/26) twinning rate and 19.2% (5/26) single birth rate. Recently, PCC has already been producing embryos locally and is continuing to improve pregnancy and calving rates for river and swamp buffaloes.

Animal IVF has opened doors in the Philippines for conserving superior genetic lines and helps expedite genetic improvement in the livestock industry. Esco Medical's line of products helps optimize environmental incubation conditions for the embryos and gives embryologists comprehensive information about the embryos for selection.



## You have our support - operations of Esco China Medical team in COVID-19

From the beginning of the outbreak of COVID-19, Esco Medical China Team has been proactive in its response and preparation. As the pandemic situation had been eased off in most cities in China, with great caution, Esco Medical China team returned to work in phases and now in full capacity to respond to the customers' call and meet their needs.



### Online product training and technical seminar during outbreak

To ensure our services are uninterrupted, our team continued to place high importance in executing our business continuity plans. We held a series of product trainings and seminars online, answering customer enquiries while working at home, and meeting different needs of customers.

*Pic1. Online end-user (from Hunan Province) seminar for TL & MIRI incubator.*

*Pic2. Online product Training for dealer from Guangxi Province*



*Above: site visits by our engineers and application specialists since March 2020 after easing of lockdowns in most cities in China*

### Resume full work capacity after easing COVID-19 lockdown measures

After end of February, when Chinese government eased off the lockdown in most cities in China, Esco China team resumed visits to IVF centers all over the country. Our customer representatives and application specialists, engaged in on-site discussion and communication with embryologists, sharing our solutions and service, providing timely application support.

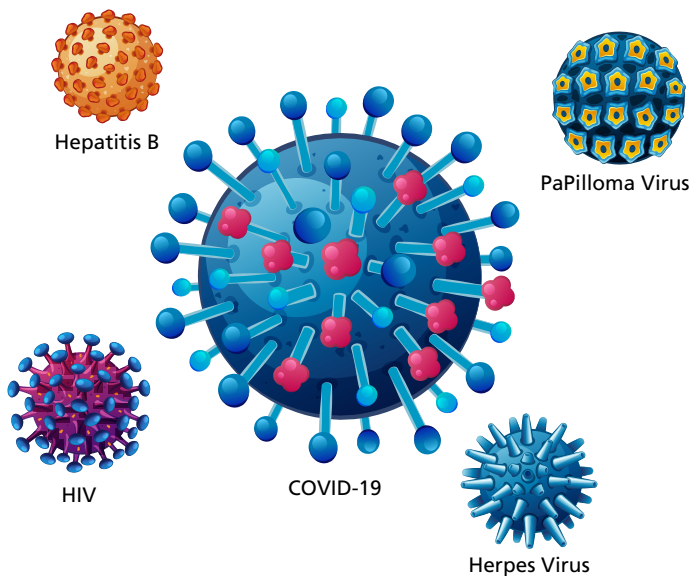
### Extensive Servicing Plan to Assist Clinics Resuming Operations

From late February, IVF centers all over China have gradually resumed their operations. To assist the re-opening of the centers, Esco China team rolled out extensive servicing plan, contacting our users extensively, enquiring on operation status of our systems, and when needed, responded quickly with on-site servicing visits. Meanwhile, for the backlog of installations delayed due to COVID-19 lockdown, Esco China team made our best efforts to schedule in as many installations as we could to minimize the impact of COVID-19 to our planned installations and servicing.



Esco Medical team will try every efforts to serve our users in spite of any unforeseen disruptions. We have your back!

# In a Nutshell : IVF in the Time of COVID-19



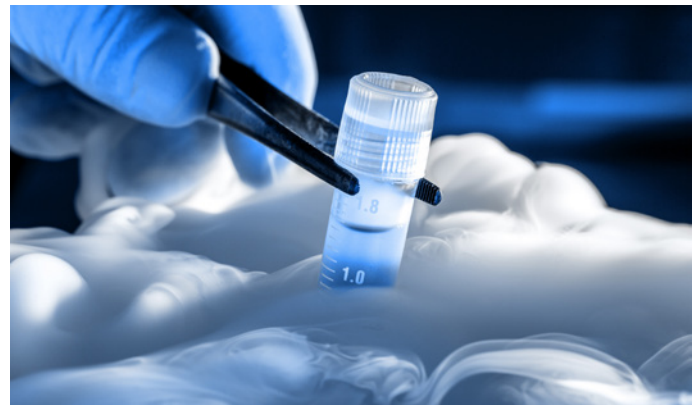
Another topic discussed is on “COVID-19 in Liquid Nitrogen”. Dr. Lodovico Parmegiani, an advisor/ consultant for companies in the IVF field, explained how this could be a potential time-bomb.

Liquid Nitrogen (LN2) and its gaseous form Nitrogen Vapor (NV) are regarded as primary cryogenic agents for cooling and freezing both in the healthcare and the food industry. It has been considered as a fluid essential for in vitro reproductive technologies extensively used in human in vitro fertilization (IVF), in the cattle industry (in vitro embryo production), and for livestock breeding research purposes.

However, such chemical can be contaminated by various microorganisms from viruses, bacteria, to fungi. On the other hand, airborne contaminants that come in contact with LN2/ NV are said to remain cryopreserved. The contamination of LN2/ NV (which can happen during storage of cells) creates a risk for biological specimen, the embryologists and patients and even the environment.

While the aerosol and surface stability of COVID-19 has been studied, the risk of the virus being accidentally cryopreserved has not been established. Dr. Parmegiani appeals to ART professionals not to undervalue the probable danger of LN2/NV mediated COVID-19 infection. He also encouraged practitioners to come up with approaches to prevent this from happening.

Esco Medical's Class II Multi-Zone ART workstation can be utilized in handling gametes and embryos from patients with communicable diseases while providing sample, user, and environmental protection. Moreover, such workstation has a negative pressure surrounding the positively pressurized contaminated plenum and the presence of filters allows the removal of airborne aerosols including biohazards; thus, providing more protection. It has multiple heating zones that enable precise temperature control across the work surface, with provision of a built-in microscope and integrated MIRI® chambers.



In an online session commenced by the International IVF Initiative on Youtube, Dr. Jacques Cohen (a US-based Dutch embryologist) served as a host and moderator inviting IVF professionals to share relevant topics concerning COVID-19 and IVF.

Dr. Kay Elder, an embryologist and a senior research scientist in the UK talked about “A close look at viruses and their relevance to ART”.

Viruses have been with us for a very long time and are found in almost every ecosystem. They are sub-microscopic entities that thrive and replicate through attaching their spike (glycoprotein) to specific receptors of living cells of an organism. After attachment, they release their genetic material (DNA or RNA) to the nucleus of the host cell and now replicate by hijacking the host cell molecular machinery.

SARS-CoV-2 or more commonly known as COVID-19 is a relative of the SARS-CoV and they both bind to the angiotensin converting enzyme 2 (ACE-2) which are strongly expressed in the GI system, kidney, and in specific cells in the lungs. Although they have similarities, any antibodies that were developed with SARS-CoV won't be effective against the COVID-19 because of difference in amino acid sequence.

In IVF, there are a number of viruses that are commonly encountered such as Herpes, HepB, HepC, HIV, etc. These virus cannot propagate on embryos because they don't have any receptor to bind to but can be transmitted via body fluids during procedures. To prevent spread of viruses and harmful contaminants, proper aseptic technique during procedures, frequent cleaning and decontamination must be observed.

## Manufacturer:

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Users of Esco Medical products should not hesitate to contact us if there are any unclear points or ambiguities in this newsletter.

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