

A C T C Association Européenne des Techn

Association Européenne des Technologies de l'Embryon

Association of Embryo Technology in Europe

December 2020

AETE Newsletter Issue 54

Editor: Roger Sturmey

Table of contents

PRESIDENTS LETTER1
AETE BOARD MEMBERS 2
AETE IS LOOKING FOR HELP!4
AETE 2021 PROGRAMME NOTES 4
TRAVEL GRANT5
INVITATION TO DUBLIN 20217
New Embryo Transfer Society9
Note of Thanks!9
UPCOMING EVENTS10
PRELIMINARY PROGRAMME – AETE 2020 11
OUR SPONSORS14

PRESIDENTS LETTER

Dear Friends, dear members of the AETE,

One year ago I started my President's letter like this: "Days are becoming shorter and temperatures are falling. It reminds us that time is flying and that 2019 is coming to an end. 2019 was a fantastic year for AETE and I hope you agree with my feeling. For the first time in our history, AETE was able to attract more than 260 people to travel to Murcia and attend our 35th annual conference."

Unfortunately, the world has drastically changed during the last 365 days: an RNA-virus is ruling the world, disturbing societies,

changing priorities and causing many uncertainties. The globalized world became smaller again as we cannot travel anymore, have to stay at home and replace our social contacts with impersonal digital meetings where the computer screen filters away all real human emotions.

Anyhow, the board decided already in April 2020 not to let the virus win and we unanimously came up with the plan to provide a digital AETE meeting alternative. This was a difficult and labour intensive talk. I want to say especially a warm thank you to Hilde Aardema and Roger Sturmey who did a tremendous job in constructing this digital alternative. The setup was very efficient, with one static abstract and poster viewing day and one interactive day. Luckily, everything went well with no major technical issues. All speakers did a great job. All attendees could vote for the best speaker of the day. Iris Martinez-Rodero was winner of the best the short oral communication. Congratulations Iris.

Earlier that summer, a General Assembly meeting was organized, also digitally. About 30 members attended. It was agreed due to the unusual circumstances most important points, eg. voting for new board members, would be postponed for one year.

And now we look forwards to next year ... what will this bring for our society? One of the most difficult questions we can have at the moment. The entire board hopes that positive news of vaccines and treatments will make it possible to reunite and see each other again in the physical world in Dublin (September 2021). The board will take a decision on that in March-April taking into account as much crucial elements as possible.

In the meantime, the board is working hard. A subcommittee is preparing an attractive

practitioners forum, tackling important aspects from the practical field. Also, to widen access to our annual meetings, we are delighted to announce **the AETE student travel grant**. This grant will make a partial financial contribution to student presenters attending our annual conference. Of course, this grant is subject to available funds. Go to our website (www. Aete.eu/students/travel-grant/) and check the eligibility requirements.

Furthermore, we decided last year to make our annual meetings free for Students. Students willing to attend our meeting will only have to pay a society membership fee. So, please, inform your students and stimulate them to attend our annual meetings. It is an ideal place to network and to train their presentation skills.

To end with, a message of hope. We go to Dublin, Ireland next year! Jan Detterer and myself were fortunate to travel and do a previsit in October 2019! For sure, AETE2021 is in fantastic hands, the hands of the LOC chaired by **Patrick Lonergan** (University College of Dublin). The budgets are approved, the conference venue is booked (again), the Croke Park stadium is reconfirmed, the menus are decided and our major sponsors are still on board. Please follow us on Facebook and our website for the latest updates. Let us hope the virus will make this dream possible!

Finally, allow me to thank via this way all the board members of our Society. They are working very hard as a team, behind the scenes, to make AETE to what it is today and to what it will be tomorrow. It is, believe me, an everyday commitment. Honestly, I missed a lot seeing them in real live this year.

Anyway, stay with us, check our website regularly and submit your work and abstracts before the 1st of May 2021! Dublin will be a feast and I hope to welcome you there.

Merry Christmas and a happy and healthy New Year!

Jo Leroy

President of the AETE

AETE BOARD MEMBERS

President Jo Leroy; Belgium Jo.leroy@uantwerpen.be

Vice President Marja Mikkola; Norway marja.mikkola@geno.no

Treasurer Jan Detterer; Germany <u>j.detterer@vost.de</u>

Secretary Teresa Mogas; Spain teresa.mogas@uab.cat

Newsletter Editor Roger Sturmey; United Kingdom roger.sturmey@hyms.ac.uk

Web site Hilde Aardema; The Netherlands <u>h.aardema@uu.nl</u>

Annual Statistics Helene Quinton; France <u>helene.quinton@evolution-xy.fr</u>

Scientific Committee Jane Morrell; Sweden jane.morrell@slu.se

Representative of ET Industry & French Foundation Daniel Le Bourhis; France Daniel.lebourhis@allice.fr

A.E.T.E. Secretary

Teresa Mogas Department of Animal Medicine and Surgery Autonomous University of Barcelona Spain

Tel: + 34 93 581 10 44 email: <u>info@aete.eu</u>

YOU PROVIDE THE GENETICS, WE PROVIDE FOLLTROPIN® EMBRYO TRANSFER WITHIN YOUR REACH



Folltropin

25 YEARS OF REPRODUCIBLE RESULTS

Batch after batch, vial after vial, Folltropin[®] delivers reproducible results.

- Folltropin[®] is used for the induction of superovulation in reproductively mature heifers and cows.
- Folltropin[®] is one of the safest products for use in superstimulation protocols due to its low LH content, and it is the most cited commercial FSH product in embryo transfer literature.
- Folltropin^{*} is a highly purified extract obtained from carefully selected porcine pituitary glands, and has a consistently low LH:FSH ratio. It is lyophilized to maintain potency under normal storage conditions.
- Each sterile 20 mL vial contains FSH equivalent to 400 mg (700 IU) of NIH-FSH-P1. When reconstituted according to label directions the final solution contains 20 mg/mL.



vetoquinol.com

Folltropin[®] was developed specifically for the superstimulation of domestic animals used in embryo transfer, based on the limitations of other gonadotrophin preparations available in the market. A great deal of effort has been expended over the years in improving superstimulaltion treatment protocols. Treatments have evolved from natural luteolysis to complete control of follicular development and ovulation. These advances have made superovulation treatment more "user friendly" and have helped in disseminating the application of embryo transfer technology throughout the world. A major advancement has been the purification of gonadotrophin products for the induction of superstimulation.

Folltropin[•] is a purified pituitary extract that has been used successfully in breeds of cattle globally for 25 years.



AETE IS LOOKING FOR



This is a call for interested representatives among AETE members to join the various Health and Safety Advisory Committee (HASAC) subcommittees of the International Embryo Technology Society (IETS). European practitioners and industry representatives are invited on board to contribute to the work of the five subcommittees. Practitioners with expertise in species other than bovine are especially scarce in the committees.

HASAC Committee - what it is and what it does? The Health and Scientific Advisory Committee of the International Embryo Technology Society is an advisory Committee, technically specialist in reproductive biotechnologies, animal health and food safety. It responds to the IETS members' questions and requests for advice related to those matters both at a national and international level. It submits recommendations based on state of the art scientific knowledge to the IETS Board of Governors (the Board) to further provide guidance and advice to international Agencies (such as the United Nations, the World Organisation for Animal Health (OIE), the European Commission). HASAC consists of 5 subcommittees.

Current composition of the HASAC committee:

Chair: George Perry (Australia) georgeperry2@bigbond.com

- Manual Subcommittee: Sue Leelawardana (New Zealand) Sudharma.Leelawardana@mpi.govt.nz
- Regulatory Subcommittee: Angela Snell (New Zealand) - <u>angela.snell@mpi.govt.nz</u>
- Research Subcommittee: Lamia Briand (France) - <u>Lamia.briand-amirat@onirisnantes.fr</u>
- Emerging Technologies and Issues Subcommittee: Charles Looney (USA)
 <u>crlooney@uaex.edu</u>
- Forms and Certificates Subcommittee: Anne Holmes (Canada)
 anne.holmes@canada.ca

In practice, the work in the committees consists of an annual meeting in January during the IETS meeting. Extra meeting may be scheduled electronically. You can read more about the committees on https://www.iets.org/comm hasac.asp.

AETE wants to support HASAC by encouraging our members to contribute to the work of the committees. On the other hand, AETE invites our European representatives to keep our AETE society updated on the new elements in the HASAC committees. We ask you to keep in contact with AETE board, and at least once a year brief us on the most recent work covered by your committee.

In case you are interested, and you would like to contribute to this valuable work for the global embryo technology society as representative of AETE by joining any of the committees, please let us know about it by contacting us info@aete.eu, by January 31 2021. Also, if you have any questions, don't hesitate to contact us.

AETE 2021 PROGRAMME Notes

As has been well documented, the physical meeting of the AETE 2020 was postponed for one year. While we had an AETE-Lite, the Board decided to 'roll-over' the main programme to Dublin 2021. The theme for this meeting is "the male effect in reproduction" which is obviously an important concept influencing embryo development and beyond.

The scientific programme includes four invited speakers. Adam Watkins will talk about 'Defining the male contribution to embryo quality and offspring health in assisted reproduction in farm animals'. Marcella Milazzotto will inform us about "Erasing gametes to write blastocysts: metabolism as the new player in epigenetic reprogramming". Albert de Vries will present "Economics of assisted reproduction in farm animals". Inmaculada Parilla will discuss "Boar seminal plasma: overview and current insights on its potential role in assisted reproductive technologies in swine". The pioneer award winner, **Hilary Dobson**, will update us on "Understanding the trade-off between the environment and fertility". In addition, there will be two workshops during the meeting: the first workshop on Quality in the IVF lab will be organised by Ana Lopes and the second workshop on Sperm preparation for Assisted Reproduction. These are not to be missed! We are also eagerly awaiting contributions from our younger members who will inform us about some of their stimulating and exciting research. Save the date today and join us in Dublin in September!

Full speaker profiles, along with titles of talks can be found on <u>aete.eu/news</u>



The AETE would like to remind all members of the **AETE travel grant**. The purpose of the grant is to make a partial financial contribution to student presenters attending our annual conference. The number of grants available will be announced on **Feb 15** each year, on both our website and our Facebook page. If awarded, the student will receive the bursary after the conference using electronic money transfer. In order to maximize the number of granted awards, the precise value of the award will depend on the estimated expenses and demonstrated/perceived needs of the recipients, up to a maximum of 250€ per awardee. The award can be used to cover costs associated with travel, hotel and registration for our AETE conference.

The grant is for students wishing to present their work as a first author during one of the lecture/poster sessions at the next AETE conference. It is mandatory that the student is the first author of the abstract.

Applicants will need a letter of support from their supervisor (or chair of department) and you will also need to write a letter explaining your motivation for the application.

Full details and full eligibility criteria can be found on our website: https://www.aete.eu/students/travel-grant/



2020 PRIZE WINNER

ORAL COMPETITION

Effect of equilibration time on gene expression of vitrified/warmed *in vitro* produced bovine embryos using the VitTrans device

Iris Martínez-Rodero¹, Erika Alina Ordóñez-León², Tania García-Martínez¹, Marc Yeste³, Sabino Azcarate⁴, Xabier Mendibil⁴, Jose I. Esmoris⁴, Manel López-Béjar¹, Teresa Mogas¹

¹Autonomous University of Barcelona, Cerdanyola del Vallès (Barcelona), Spain; ²InVitro Group, Tabasco, México; ³University of Girona, Girona, Spain; ⁴IK4-Tekniker, Eibar (Gipuzkoa), Spain.

Keywords: mRNA, apoptosis, oxidative stress.

For the successful application of vitrification technology to field conditions, the procedures used for warming and transfer of the cryopreserved in vitro produced (IVP) bovine embryos should be as simple as possible. The device VitTrans, designed by our group, enables warming/dilution of IVP embryos and their transfer directly to recipient females in field conditions (Morató and Mogas. Cryobiology, 68, 288, 2014). During vitrification, the exposure time of the embryo to the vitrification solution is commonly considered to be critical, and should be strictly controlled within 1 min. However, the exposure time to the equilibration solution is flexible, ranged from 2 min to 15 min. This study aimed to examine the effect of different equilibration times on gene expression of bovine blastocysts vitrified/warmed using the VitTrans device. IVP day 7 expanded blastocysts were exposed to equilibration solution (7.5% ethylene glycol (EG) + 7.5% dimethyl-sulfoxide (DMSO) in TCM199 + 20% Foetal Calf Serum) for 3 min (Short equilibration: SE) (n=55) or 12 min (Long equilibration: LE) (n=51). Blastocysts were then transferred to vitrification solution (15% EG + 15% DMSO + 0.5M sucrose in TCM199 + 20% Foetal Calf Serum), loaded onto the VitTrans device and plunged into liquid nitrogen. The entire process from embryo immersion in the vitrification solution to plunging was completed within 1 min. Fresh non-vitrified blastocysts (n = 56) were set as a

control group. Warming was performed by injecting 0,3 mL of warming solution (0.5 M sucrose in TCM199 + 20% Foetal Calf Serum) at 45°C into the inner channel of the device. Blastocysts were then cultured in SOF medium at 38.50 C in a 5% CO2, 5% O2 humidified atmosphere. The relative mRNA abundance for BAX, BCL-2, SOD1, AQP3, CX43 and IFNT genes of vitrified/warmed viable blastocysts was assessed at 24 h postwarming using RT-PCR. Gene expression was analysed by Kruskall-Wallis test and followed by two-way ANOVA. Significance was set at P≤0.05. Analysis for gene expression revealed no differences in BAX, AQP3, CX43 and IFN7 genes between blastocysts vitrified after SE or LE, whereas significantly higher abundance of BCL-2 and SOD1 transcripts was observed in blastocysts after SE when compared to vitrified blastocysts exposed to LE. A clear trend (p=0.07) towards higher CX43 expression was present in blastocysts exposed to SE when compared to LE group. To conclude, this study showed that embryos exposed to equilibration solution for 3 min previously to vitrification/warming using the VitTrans methodology regulated relative expression level of anti-apoptotic (BCL-2) and antioxidant enzyme (SOD1) genes, which may be indicative of a better embryo competence. Further studies are warranted to determine if these observations are related with a higher pregnancy rate.

This study was supported by the Spanish Ministry of Science and Innovation (Project AGL2016-79802-P and grant BES-2017-081962) and Generalitat de Catalunya (Project 2017 SGR 1229).



INVITATION TO DUBLIN 2021

On behalf of the Association of Embryo Technology in Europe, the local organizing committee, chaired by Pat Lonergan, is pleased to invite you to the 36th annual scientific meeting in Ireland's capital city of Dublin, from the 8th to 9th of September 2021.



Match Day at the iconic Croke Park, home to the Gaelic Athletic Association

Located just north of Dublin city centre, only 15 minutes from Dublin Airport, the venue, Croke Park, is the home of Ireland's largest sporting and cultural organisation, the Gaelic Athletic Association (GAA) which is celebrated as one of the great amateur sporting associations in the world. The GAA is part of the Irish consciousness and plays an influential role in Irish society that extends far beyond the basic aim of promoting Gaelic games. With a capacity of 82,300, Croke Park is Europe's third largest stadium after the Nou Camp in Barcelona and Wembley in London. It has played host to iconic moments in Irish sport & history and to major cultural and international events. not to mention international conferences.



Conference facilities high up in the stadium.

Every September, the GAA's two annual marquee events - the GAA All-Ireland

Football and Hurling Championship Finals – attract a capacity 82,300 fans, to witness the pinnacle of Gaelic games action in this world-renowned cathedral of sport. Note that this is a slight deviation next year from the traditional Friday/Saturday dates, which was necessary to secure the location, but we hope that it will give attendees an extra day to perhaps catch a game at this iconic venue and enjoy what Dublin has to offer



Hurling, one of the fastest (and perhaps most dangerous?) sports in the world

There is lots to see and do in Dublin. Don't be alarmed if someone asks if there is 'any craic?' *Craic* (fun) is something that comes naturally to Irish people in general. Walk in to practically any one of the hundreds of great bars in the city and you'll have a great night out. Just some of the things to see are listed below. And of course remember that Dublin is the gateway to exploring the rest of Ireland – only a few hours by car from Galway in the West, Cork in the South and Belfast in the North.

Trinity College Dublin is right in the centre of the city. One of the most famous universities in the world, take a stroll through this ancient seat of learning. Located in Trinity College, the Book of Kells Exhibition is a must-see on the itinerary of all visitors to Dublin. The Book of Kells, a 9th century manuscript that documents the four Gospels of the life of Jesus Christ, is one of Ireland's greatest cultural treasure and the world's most famous medieval manuscript. The exhibition also features access to the Long Room, one of the world's most beautiful libraries, that houses 250,000 of the college's oldest books.



The beautiful Long Room in Trinity College Dublin.

Dublin's **General Post Office or GPO**, is a significant building on Dublin's main street, O'Connell Street, because of its role in Irish history. In 1916, during the so-called Easter Rising, launched by Irish republicans to end British rule in Ireland and establish an independent Irish Republic, the GPO was the headquarters of the uprising's leaders.

You may want to swing through some of Dublin's oldest **pubs**, like the *Brazen Head* (dating to 1198!), which counted writer Jonathan Swift among its customers. *The Stag's Head* was established in the late 18th century; James Joyce was one of the notables who stopped by.

Its hard to visit Ireland without coming in contact, at least once, with a pint of Guinness. The Guinness Storehouse is now the most popular attraction in Ireland in visitor numbers (the Cliffs of Moher on the west coast being second). Not only will you learn about how Guinness was originally discovered and how it has developed over the last 250 years, you'll also get to pour your very own pint and then sample it. If beer is not your thing, fear not, the Jameson Distillery is located just across the river Liffey from the Guinness factory. This is where Ireland's most famous whiskey was distilled since 1870 but today it is a museum and visitor's centre which features guided tours, whiskey tasting, bars, restaurant and a gift shop.

Dublin has dozens of other general and specialist tours for you to take. From the Viking Splash Tour to Literary Pub Crawl to personalised walking tour podcasts.



Temple Bar on the banks of the Liffey is a hive of activity with many pubs and restaurants to suit all tastes.

Other things worth visiting if time permits include:

- **Dublin Castle**, originally built to help defend the Norman city of Dublin, the castle was the seat of the UK government's administration in Ireland until 1922. Today it has been completely restored and is a major Irish government complex where many official and important government events are held.
- **St. Patrick's Cathedral**, dating back to 1191, is the tallest and largest church in Ireland and one of the few buildings left from medieval Dublin.
- **Temple Bar**, with it's narrow cobbled streets full of art spaces, restaurants and really good bars like the Palace Bar, the Temple Bar Pub, Oliver St. John Gogarty's and The Auld Dubliner.
- **Kilmainham Gaol**, opened from 1796 to 1924 and now one of the biggest unoccupied gaols in Europe.
- **St. Stephen's Green**, a focal point for hundreds of years, it was only formally laid out (in the current design) by in the 1870s.
- The **Phoenix Park** is the largest walled city park in Europe and is a treasure trove of parkland, woods, walks, lakes and home a large herd of wild Fallow deer and to Dublin Zoo, founded in 1831.



The Ha'penny Bridge, built in May 1816, is a pedestrian bridge across the Liffey river that splits Dublin into north and south. It was originally tolled, costing a half penny to use it.

How to get there





Being a capital city, Dublin is served from all major international airports. On arrival, it is a only 15 minutes to Croke Park and a further 5 minutes to the city centre. Given the proximity to the city centre, there are many accommodation options. Perhaps most convenient is The Croke Park Hotel (www.doylecollection.com/hotels/) located across the road from the venue. However, many other possibilities exist.

More information including details of the Welcome Reception, Gala Dinner and last night activities will appear in due course on the AETE website. Ireland is famous for its *Céad Mile Fáilte* (a hundred thousand welcomes) - the same warm Irish welcome awaits the you at the 2021 AETE meeting in Dublin. We look forward to seeing you there!



A new Embryo Transfer Association the British Embryo Technologies Association (BETA) has recently started in the UK. The Association is hoping to build membership in 2021 and is very open to collaborate and communicate with other ET Associations. We have already established links with the Italian Embryo Transfer Association and are very open to further collaborations ahead. Anyone wishing contact us please click on to this https://britishembryotechnologies.co.uk link

Wishing all ET practitioners/technicians Best of Luck for 2021.

Peter May President.

NOTE OF THANKS!

This year's AETE-Lite was a necessary change resulting from the Coronavirus pandemic, and while many people have been thanked for their support and efforts, it is vital that we fully acknowledge the support from **Utrecht University technical team**.

The team at Utrecht supported The Board by releasing access for large events on their own license of Microsoft Teams, and provided support and guidance during the set up of the platform. Importantly, they did this extra work for free and during a time when all Universities were rapidly increasing their online functions.

It is safe to say that without the input from Utrecht, AETE-Lite would not have happened.

UPCOMING EVENTS

FERTILITY 2021 6-10 January 2021 Virtual https://fertilityconference.org

IETS – 47TH ANNUAL MEETING 18-21 January 2021 Virtual https://www.iets.org/2021/

ICAR-INTERBULL CONFERENCE 26-30 April 2021 Leeuwarden, The Netherlands https://www.icar2021.nl

ICAR 2021 27th June-1st July Bologna, Italy http://icar2020.org/2020/loadpage/home/home

Society for the Study of Reproduction 4-7 August 2021 St Loius, USA https://www.ssr.org/

AETE 8-9 September 2021 Dublin, Ireland https://www.aete.eu

ESDAR 12-17 October 2021 Thessaloniki, Greece https://www.esdar.org

AETA & CETA/ACTE JOINT ANNUAL CONVENTION 13-16 October 2021 Westin Bayshore, Vancouver, Canada https://www.aeta.org/mtg_future.asp

PLEASE NOTE – ALL DETAILS SUBJECT TO CHANGE...

PRELIMINARY PROGRAMME – AETE 2021



Association Européenne des Technologies de l'Embryon Association of Embryo Technology in Europe

36th SCIENTIFIC MEETING

CROKE PARK

Dublin, Ireland

PROGRAMME

8th and 9th September, 2021

TUESDAY, September 7th 2021

18.30-20.00: Registration 20.00-22.00: Welcome Reception

WEDNESDAY, September 8th 2021

08.00-17.00: Registration

08.45-18.00:

Opening meeting

SESSION 1: First invited lecture:

Marcella Milazzotto, Center of Natural and Human Science of Federal University of ABC, São Paulo, Brazil Erasing gametes to write blastocysts: metabolism as the new player in epigenetic reprogramming.

Second invited lecture:

Adam Watkins, Division of Child Health, Obstetrics and Gynaecology, University of Nottingham, UK Defining the male contribution to embryo quality and offspring health in assisted reproduction in farm animals

POSTER SESSION 1 and coffee break

Short oral communications: Student Competition

Lunch

SESSION 2: Third invited lecture:

Inmaculada Parrilla, Department of Animal Medicine and Surgery, University of Murcia, Murcia, Spain

Boar seminal plasma: overview and current insights on its potential role in assisted reproductive technologies in swine

Short oral communications

POSTER SESSION 2 and coffee break

Workshop I: Preparing semen for practical use in and out the IVF-lab chaired by Sean Fair, Department of Biological Sciences, University of Limerick, Ireland

20.00-02:00: Gala Dinner. Royal Casino

THURSDAY, September 9th 2021

08:00-18.00:

SESSION 3: Fourth invited lecture: Albert De Vries, Department of Animal Sciences, University of Florida, USA Economics of assisted reproduction in farm animals.

Short oral communications

POSTER SESSION 3 and coffee break General Assembly Lunch/Student Lunch

SESSION 4: Short oral communications

Fifth invited lecture

Hilary Dobson, School of Veterinary Science, University of Liverpool, Liverpool, UK

Understanding the trade-off between the environment and fertility *Pioneer award 2020* - Hilary Dobson AETE Medalist Presentation

introduced by Martin Sheldon (UK) *POSTER SESSION 4* and coffee break

Workshop II: Rigor in the IVF laboratory. chaired by Ana Sousa Lopes, Esco Medical, Denmank

Closing session: Student Competition results and invitation to the AETE Conference 2021

20.00-24:00: Farewell party

