ESHRE 2020 Virtual (5-8 July 2020)

Questions for the speakers

PCC05: Is sex worth the effort?

Balancing embryonic development through 'imbalance' - Wei Li (China)

Q: In hES, are only the imprints erased of is all DNA methylation erased?

A: No answer received

Q: How efficient is the methodology and have you seen any ' mosaicism'?

A: No answer received

Q: Are the pups from the bimaternal mice normal in terms of epigenetics?

A:

Q: Why is it more difficult to make bipaternal than bimatermal mice? What is the next step to try to obtain bipaternal mice?

A: No answer received

Organoids and chimeras from pluripotent stem cells - Bernard Roelen (The Netherlands)

Q: If you make human organs in a mouse, is the vasculature from mouse or human origin?

A: First of all, because of size differences, human organs will not be generated in the mouse. Large animals like sheep or pigs are more realistic carriers for human organs. If a porcine embryo is generated in which expression of a master gene for a specific organ, say a pancreas, will be generated and combined with human pluripotent cells, the resulting fetus will have a human pancreas, while the rest of the tissue will be mostly pig, with a small human contribution. This will also include the vasculature. So most of the vascular cells will be from the host embryo, and will not be human

Q: If you make pig-chimeras with human PSC: how do you make sure the human cells do not go to the brain or germline?

A: In order to prohibit pluripotent cell to become brain or germ, genes that are responsible for formation of the tissues should be switched off (eg using CRIPSR/Cas9). It should be clear however that the gene that is switched off does not have an (additional) important function in the organ that should be derived from the stem cells.

Q: Will this feasible (organ-transplant) in the future? and what could be the first organ to be generated for transplant?

A: The most feasible organ would be an organ/ tissue of which endogenous formation (by the host embryo) can be relatively easily be prevented, for instance by switching off a master gene. Pancreas and liver would seem realistic.

Lessons from early human gonadal development - Linn Salto Mamsen (Denmark)

Q: What would be the function of testosterone in fetal males?

A: No answer received

Q: What is your candidate for genes controlling ovarian development?

A: No answer received

Q: How could we study the impact of PFC in ongoing human pregnancies? Could we see an impact in embryo development between exposed and unexposed women?

A: No answer received

Q: What would be the (evolutionary) reason that male embryos are more susceptible to toxic compounds than female embryos?

A: No answer received

Q: Are there human data on the influence of exposures on the second generation- number and quality of germ cells in granddaughters/-sons

A: No answer received

Blastocyst-like structures generated solely from stem cells - Mina Popovic (Spain)

Q: Will it be feasible to make human blastoids in the future?

A: No answer received

Q: Should these blastocyst-like structures be regarded ethically as actual embryos?

A: No answer received

Q: What is the difference between mESC and mEPS (from Li)?

A: No answer received

Q: Wouldn’t it be a good idea to do some similar 'gene editing' experiments as Prof Li his work on the ESC first, to ensure better reprogramming of them?

A: No answer received

Q: Why do you think embryo-like structures (blastoids) fail to implant in mice?

A: No answer received

Q: What is the indication the axis formation takes place in the blastoids? How are the blastoids different from embryoid bodies?

A: No answer received

From artificial ovary to in vitro follicular culture: The future revolution - Isabelle Demeestere (Belgium)

Q: Is it better to culture the primary follicles in the tissue or isolate and culture in bio-polymers?

A: No answer received

Q: Is the Hyppo also important in humans or only in mice?

A: No answer received

Q: Folliculogenesis is a complex process: what do you think is the most difficult step to mimic in vitro?

A: No answer received

Q: What would be your benchmarks the meet before artificial ovary+IVM techniques are safe for clinical use?

A: No answer received

Q: How normal were the MII oocytes matured in vitro? do you know if anyone tried to fertilize those?

A: No answer received

Q: Do you think the promise of this technology justifies OTC for patients who currently cannot receive transplantation (e.g. leukemia)?

A: No answer received

Reassembly of adult human testicular cells: Can testis cord-like structures be created in vitro? - Stefan Schlatt (Germany)

Q. What signals are produced by the Sertoli to keep the SSC quiescent?

A: No answer received

Q: Is the primate a good model to study human spermatogenesis?

A: No answer received

Q: Do you think Sertoli cells are sufficient to make the niche, or do you think we need myoid cells and Leydig cells?

A: No answer received

Q: What is the timeframe/period of the live-videos that you are showing?

A: No answer received

Q: In your opinion, how important is it to have the morphology of in vitro created testis cords to recapitulate the real in vivo situation?

A: No answer received

Q: What do you think are the next steps to optimise this technology? How far are we to apply this technology in humans?

A: No answer received

Q: regarding paternal age... are the sperm from older men compromised, i.e. neuropsychiatry challenges in the children?

A: No answer received

Future of ART - Gerald P. Schatten (U.S.A.)

Q: Is there confirmation that the CRISPR-babies were indeed gene edited?

A: No answer received

Q: Do you think there will be different legislation to use CRISPR in human reproduction and food? (US vs EU)

A: No answer received

Q: Are there any results regarding covid in IVF and preimplantation development?

A: No answer received

Q: Are we close to using fertility preservation technology in humans (cancer patients)?

A: No answer received

Q: Do you think we should prefer IVF to ICSI?

A: No answer received

Q: Would you agree that after decades of research efforts to make procreation safer, several new and future ARTs paradoxically go in the opposite direction?

A: No answer received

Q: In your personal view, if allowed, where would you draw the line of what can/should be done regarding CRISPR (repair what? Improve what?)?

A: No answer received

Editing the human genome - Cristina Eguizabal (Spain)

Q: Can you say about more about this "prime editing"?

A: No answer received

Q: Has the prime-editing been used in human cells? And in mouse/human zygotes?

A: No answer received

Q: Recent preprint data show that large DNA deletions and reshuffling heighten safety concerns on heritable genome editing. Can you tell us more about this?

A: No answer received

Q: Do you think that gene editing technology will be used in the future in clinics? For example in human embryos instead PGT?

A: No answer received

Q: Does prime editing gives less/more mosaicism?

A: No answer received

Q: Will preimplantation testing end after genome editing is improved.

A: No answer received

Not mentioned to whom the question is addressed

Q: What do you think is the sex determination window in humans and what could be the origin of bipotential progenitors?

A: No answer received

Q: What is the criteria to include women in the "smoking" group (1 cig per day? or more?)

A: No answer received

Q: Are there studies on the quality of primordial follicles for oocyte generation from young and aged females

A: No answer received

Q: Is it possible to initiate meiosis in your model by retinoic actid?

A: No answer received