



CONFERENCE 2014, Xi'an, China

Transgenic Farm Animal Workshop

STANDING COMMITTEES / WORKSHOPS

Information will be posted online

Organised by a standing committee

no

Date and meeting time: Friday 1st August 2014, 10.15 am – 12.30 pm

Chair, name and contact email:

Co-chair: Prof Alan L. Archibald (alan.archibald@roslin.ed.ac.uk) on behalf of Prof C.

Bruce A. Whitelaw (bruce.whitelaw@roslin.ed.ac.uk)

Co-chair: Prof Zhiying Zhang (zhangzhy@nwsuaf.edu.cn)

Agenda / programme attached

10.15 – 10.45 '*Engineering genetic variation*' - Alan Archibald and Bruce Whitelaw

10.45 – 11.15 '*Genome editing of the bovine beta lactoglobulin locus using zinc finger nucleases (ZFNs) and transcription activator-like enzyme nucleases (TALENs)*' – Stefan Wagner

11.15 – 11.30 '*Establishment of chicken genetic engineering technology*' – Fei Gao

11.30 – 11.45 '*Efficient production of transgenic sheep overexpressing of TLR4 by the microinjection of in vivo pronuclear embryos*' – Yan Li

11.45 – 12.00 '*Efficient production of transgenic pigs by cytoplasmic injection of piggyback transposase based pmGENIE-3 plasmids*' – Fang Zeng and Zicong Li

12.00 – 12.15 '*Suppression of avian influenza virus by transgenic chickens via Mx protein and RNA interference*' – Qingwen Meng

12.15 – 12.30 Discussion

Number of participants at meeting: ~ 100

Summary of the meeting including votes, decisions taken and plans for future conferences

Although genetic modification technologies have been presented at previous ISAG conferences by plenary speakers, this workshop was the first ISAG workshop on transgenic animals. Prof Archibald presented an overview of the development of gene modification technologies from the mid-1980s to the current day with an emphasis on the applications of the technologies in farmed animal species, including sheep, pigs and chickens. During the discussion following this opening talk the issues of applications in agriculture and regulatory issues were discussed.

The other speakers presented recent research results on the application of a range of genetic modification technologies from microinjection to genome editing with zinc finger nucleases (ZFNs) and transcription activator-like enzyme nucleases (TALENs) in cattle, sheep, pigs and chickens. In addition to a focus on the development and deployment of the technologies in these

non-model organisms, there was an emphasis on applications concerned with engineering resistance to infectious diseases.

The workshop was well attended and the participants contributed to the questions and discussions after each presentation.

There was no proposal to establish a standing committee in the area of genetic modification or transgenic technologies. Thus, there was no reason to elect a committee to organise subsequent workshops.

This area of research was considered appropriate for presentations and discussions at future ISAG conferences.