

1. Institution

Lecturer and head of the Reproduction Unit, Institute of Animal Breeding and Genetics, Department for Biomedical Research, University of Veterinary Medicine-VUW, Veterinärplatz 1, A-1210 Vienna, Austria

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2. Principal investigator and contact person

Urban Besenfelder (urban.besenfelder@boku.ac.at)

3. Key personnel

Vitezslav Havlicek	vitezslav.havlicek@boku.ac.at	In vitro production, transfer techniques
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4. Research profile

In our laboratory we mainly focus on comparative studies on early embryo development in vitro versus in vivo. We specialized in different endoscopic techniques for collecting and transferring oocytes and embryos at different developmental stages. Moreover, we stepwise cultured in vivo or in vitro produced embryos in vitro or in vivo, respectively, and we used different hormonal protocols. Our research interests are directed towards the assessment of embryo quality regarding morphological changes and gene activities.

5. Key technologies and tools

Ex vivo collection of oocytes and early tubal stage bovine embryos, in vivo culture, in vitro production of embryos, follicular dynamics, endocrine regulation, techniques to access the bovine oviduct, cryopreservation

6. Selected publications (max. 5)

Besenfelder U, Havlicek V, Moesslacher G, Gilles M, Tesfaye D, Griese J, Hoelker M, Maddox Hyttel P, Lurincik J, Brem G, Schellander K: (2008): Endoscopic Recovery of Early Preimplantation Bovine Embryos: Effect of Hormonal Stimulation, Embryo Kinetics and Repeated Collection. *Reprod Dom Anim* 43, 566–572.

Tesfaye D, Lonergan P, Hoelker M, Rings F, Nganvongpanit K, Havlicek V, Besenfelder U, Jennen D, Tholen E, Schellander K. (2007): Suppression of connexin 43 and E-cadherin transcripts in in vitro derived bovine embryos following culture in vitro or in vivo in the homologous bovine oviduct. *Mol Reprod Dev.* 74;978-988.

Wetscher F, Havlicek V, Huber T, Gilles M, Tesfaye D, Griese J, Wimmers K, Schellander K, Müller M, Brem G, Besenfelder U. (2005): Intrafallopian transfer of gametes and early stage embryos for in vivo culture in cattle. *Theriogenology*, 64,30-40.

Wetscher F, Havlicek V, Huber T, Müller M, Brem G, Besenfelder U. (2005): Effect of morphological properties of transferred embryonic stages on tubal migration Implications for in vivo culture in the bovine oviduct. *Theriogenology*, 64,41-48.

Havlicek V, Wetscher F, Huber T, Brem G, Müller M, Besenfelder U. (2005): In vivo culture of IVM/IVF embryos in bovine oviducts by transvaginal endoscopy. *J Vet Med A*, 52,94-98.