

1. Institution

Senior Scientist, Clinic for Cattle / Reproductive Medicine Unit, University of Veterinary Medicine Hannover, Bischofsholer Damm 15, 30173 Hannover, Germany
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2. Principal investigator and contact person

Christine Wrenzycki (Christine.Wrenzycki@tiho-hannover.de)

3. Key personnel

Katharina Höffmann	Katharina.Isabell.Hoeffmann@tiho-hannover.de	Superovulation, In vitro production of embryos, ultrasonography
Ana Hanstedt	Ana.Hanstedt.Hoeffmann@tiho-hannover.de	Ovum pick-up, In vitro production of embryos
Hanna Stinshoff	Hanna.Stinshoff@tiho-hannover.de	Cryopreservation, In vitro production of embryos
Eike Onnen-Lübben	Eike.Onnen-Luebben@tiho-hannover.de	Ultrasonography (Doppler)
Sandra Wilkening-Kraas	Sandra.Wilkening-Kraas @tiho-hannover.	RT-PCR, Immunohistochemistry

4. Research profile

The laboratory studies effects of different environments on gene expression patterns in embryos of different origins, i.e. generated in vivo or in vitro, to assess embryo quality, and analyses the underlying mechanisms, i.e. epigenetic modifications. In addition, the consequences of nutrition on oocyte quality and corpus luteum function in dairy cows are determined and linked to early embryonic mortality.

5. Key technologies and tools

In vitro production of embryos – Ovum pick-up – Superovulation – Embryo flushing – RT-PCR – Immunohistochemistry – Repeated biopsy of the corpus luteum

6. Selected publications (max. 5)

J. Block, C. Wrenzycki, H. Niemann, D. Herrmann, and P.J. Hansen (2008) Effects of insulin-like growth factor-1 on cellular and molecular characteristics of bovine blastocysts produced in vitro. *Molecular Reproduction and Development* 75, 895-903.

A.S. Lopes, C Wrenzycki, N.B. Ramsing, D. Herrmann, H. Niemann, P. Lovendahl, T. Greve, and Callesen H. (2007) Respiration rates correlate with mRNA expression of G6PD and GLUT1 genes in individual bovine in vitro-produced blastocysts. *Theriogenology* 68, 223-36

K. M. Morton, D. Herrmann, B. Sieg, C. Struckmann, W.M.C. Maxwell, D. Rath, G. Evans, H. Niemann, and C. Wrenzycki (2007) Altered mRNA expression patterns in bovine blastocysts after fertilization in vitro using flow-cytometrically sex-sorted sperm. *Molecular Reproduction and Development* 74, 931-940

C. Wrenzycki, D. Herrmann, and H. Niemann (2003) Timing of blastocyst expansion affects spatial expression patterns of developmentally important genes in bovine blastocysts produced in vitro. *Biology of Reproduction* 68, 2073-2080

C. Wrenzycki, A. Lucas-Hahn, D. Herrmann, E. Lemme, K. Korsawe, and H. Niemann (2002) In vitro production and nuclear transfer affect dosage compensation of the X-linked gene transcripts G6PD, PGK and Xist in preimplantation bovine embryos. *Biology of Reproduction* 66, 127-134