

## 1. Institution

Veterinary Sciences Unit, attached to the Institut des Sciences de la Vie of the Catholic University of Louvain, Place Croix du Sud 5 box 10, B-1348 Louvain-la-Neuve, Belgium

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## 2. Principal investigators

Isabelle Donnay, DVM, PhD, Associate Professor, Head of the Unit ([isabelle.donnay@uclouvain.be](mailto:isabelle.donnay@uclouvain.be)) – contact personne

René Rezsohazy, PhD, Associate Professor ([rene.rezsohazy@uclouvain.be](mailto:rene.rezsohazy@uclouvain.be))

## 3. Research profile

The laboratory is involved in researches aiming to understand the regulation of key events in embryo development and the impact of origin and environmental factors on oocyte competence and embryo quality (gene expression, metabolism, kinetics of development, apoptosis...).

Both cattle and mouse are used as models.

We are also involved in a project of cryobanking aiming to save endangered local sheep breeds.

## 5. Key technologies and tools

In vitro production of bovine embryos, time-lapse cinematography to study the kinetics of embryo development, transcriptomics.

## 6. Selected publications (max. 5)

1. Lequarre A.S., Traverso J.M., Marchandise J., Donnay I. Poly(A)RNA is reduced by half during bovine oocyte maturation but increases when meiotic arrest is maintained with CDK inhibitors. *Biol Reprod*, 2004, 71, 425-431.
2. Leyens G., Verhaeghe B., Landmeters M., Marchandise J., Knoop B., Donnay I. Peroxiredoxin 6 is upregulated in bovine oocytes and cumulus cells during in vitro maturation: role of intercellular communication. *Biol Reprod*, 2004, 71, 1646-1651.
3. Matis C., Oury F., Lampe X., Gofflot F., Picard J.J., Rijli F.M., Rezsohazy R., Identification of Lmo1 as part of a Hox-dependent regulatory network for hindbrain patterning. *Dev. Dyn.*, 2007, 236, 2675-2684.
4. Alomar M., Tasiaux H., Remacle S., George F., Paul D., Donnay I., Kinetics of fertilization and development, and sex ratio of bovine embryos produced using the semen of different bulls. *Anim Reprod Sci*, 2008, in press.
5. George F., Daniaux Ch., Genicot G., Verhaeghe B., Lambert Ph., Donnay I., Set up of a serum-free culture system for bovine embryos: embryo development before and after transfer, lipid and glutathione content and resistance to freezing. *Theriogenology*, 2008, in press.