

1. Institution

Laboratory of Reproductive Technologies, Istituto Sperimentale Italiano Lazzaro Spallanzani, Via Porcellasco 7/f, 26100 Cremona, Italy.

2. Principal investigator and contact person

Giovanna Lazzari, DVM (giovannalazzari@galli2.it) +39 0372437242

3. Key personnel

Silvia Colleoni	silviacolleoni@lrciz.it	Embryology, gene expression, stem cells culture
Irina Lagutina	irinalagutina@lrciz.it	Embryology, somatic cell nuclear transfer, immunohistochemistry

4. Research profile

The laboratory has a long standing established reputation in the field of gametes and embryo technologies in several mammalian species such as bovine, buffalo, swine, ovine and equine embryo culture requirements and effects on development. Recently the laboratory has worked in the field of reproductive toxicology evaluating the effect of toxic compound on the female gametes (EU ReProTect Project). Currently the group is involved in projects trying to understand the factors affecting embryo implantation with particular focus on the effect of the inbreeding on embryo developmental competence as well as uterine factors that might affect embryo survival, gene expression and implantation in dairy cows

5. Key technologies and tools

In vitro embryo production by IVF, ICSI and nuclear transfer, , in vivo embryo transplantation and recovery, totipotency and differentiation of the pre-implantation embryo, semi-quantitative PCR, immuno-histochemistry. isolation and in vitro culture of embryonic stem cells, adult stem cells and somatic cells, stem cell differentiation, in vitro toxicity testing with gametes and embryos

6. Selected publications (max. 5)

1. Brown BD, Gentner B, Cantore A, Colleoni S, Amendola M, Zingale A, Baccarini A, Lazzari G, Galli C, Naldini L. Endogenous microRNA can be broadly exploited to regulate transgene expression according to tissue, lineage and differentiation state. **Nat Biotechnol** 2007;25: 1457-1467.
2. Colleoni S, Donofrio G, Lagutina I, Duchi R, Galli C, Lazzari G. Establishment, differentiation, electroporation, viral transduction, and nuclear transfer of bovine and porcine mesenchymal stem cells. **Cloning Stem Cells** 2005;7: 154-166.
3. Galli C, Duchi R, Crotti G, Turini P, Ponderato N, Colleoni S, Lagutina I, Lazzari G. Bovine embryo technologies. **Theriogenology** 2003;59: 599-616.
4. Lazzari G, Colleoni S, Giannelli SG, Brunetti D, Colombo E, Lagutina I, Galli C, Broccoli V. Direct derivation of neural rosettes from cloned bovine blastocysts: a model of early neurulation events and neural crest specification in vitro. **Stem Cells** 2006;24: 2514-2521.

5. Lazzari G, Wrenzycki C, Herrmann D, Duchi R, Kruip T, Niemann H, Galli C. Cellular and molecular deviations in bovine in vitro-produced embryos are related to the large offspring syndrome. **Biol Reprod** 2002;67: 767-775.