

## 1. Institution

Laboratory of Biomedical Embryology, Department of Animal Sciences, Centre for Stem Cell Research, Faculty of Veterinary Medicine, University of Milan, via Celoria 10, 20133 Milano - Italy.

<http://users.unimi.it/embiolab>  
[www.unistem.it](http://www.unistem.it)

## 2. Principal investigator and contact person

Fulvio Gandolfi ([fulvio.gandolfi@unimi.it](mailto:fulvio.gandolfi@unimi.it)) +3902 5031 7990

## 3. Key personnel

Tiziana A.L. Brevini	<a href="mailto:tiziana.brevini@unimi.it">tiziana.brevini@unimi.it</a>	embryology, stem cell biology
Stefania Antonini	<a href="mailto:Stefania.Antonini@unimi.it">Stefania.Antonini@unimi.it</a>	gene expression, bioinformatics
Georgia Pennarossa	<a href="mailto:Georgia.Pennarossa@unimi.it">Georgia.Pennarossa@unimi.it</a>	tissue culture and immunohistochemistry

## 4. Research profile

The laboratory works on the mechanisms that regulate oocyte quality as a key factor for embryonic development. Aspects currently studied include: the relationship between maternal nutrition and oocyte-cumulus cells RNA content and protein expression; the relationship between cumulus cells gene expression and oocyte quality as a marker for oocyte selection in assisted reproduction techniques; the molecular mechanisms that mediate the effects of environmental contaminants on oocyte competence.

Our studies are mainly based on quantitative PCR and immuno-histochemical analysis of oocytes, embryos generated in vitro and somatic cells. Cell cultures and co-cultures are also performed.

We commonly work with human, pig, sheep and mouse material.

## 5. Key technologies and tools

In vitro embryo production - quantitative PCR – Immuno-histochemistry – Tissue culture and stem cell cultures

## 6. Selected publications (max. 5)

Brevini TA, Cillo F, Antonini S, Tosetti V, Gandolfi F. Temporal and spatial control of gene expression in early embryos of farm animals. *Reprod Fertil Dev* 2007;19: 35-42.

Cillo F, Brevini TA, Antonini S, Paffoni A, Ragni G, Gandolfi F. Association between human oocyte developmental competence and expression levels of some cumulus genes. *Reproduction* 2007;134: 645-650.

Brevini TA, Vassena R, Francisci C, Gandolfi F. Role of Adenosine Triphosphate, Active Mitochondria, and Microtubules in the Acquisition of Developmental Competence of Parthenogenetically Activated Pig Oocytes. *Biol Reprod* 2005;72: 170-175.

Brevini TA, Cillo F, Colleoni S, Lazzari G, Galli C, Gandolfi F. Expression pattern of the maternal factor zygote arrest 1 (Zar1) in bovine tissues, oocytes, and embryos. *Mol Reprod Dev* 2004;69: 375-380.

Brevini TA, Vassena R, Paffoni A, Francisci C, Fascio U, Gandolfi F. Exposure of pig oocytes to PCBs during in vitro maturation: effects on developmental competence, cytoplasmic remodelling and communications with cumulus cells. *Eur J Histochem* 2004;48: 347-356.