

**Natalia Renska**  
**SABRE Placement Report for visit to MTT Agrifood Research Finland (Jokioinen)**

First of all I would like to express my gratitude to SABRE for the financial support of my short term placement to Animal Genomics Group of the MTT Agrifood Research Finland in Jokioinen. I was there from the 13<sup>th</sup> of June until the 10<sup>th</sup> of September 2009. Furthermore, I would like to thank Prof. Johanna Vilkki and Dr. Jaana Peippo for offering me this training opportunity. Finally I am very grateful to Kati Korhonen and Mervi Rätty for the wonderful supervision during my stay in Jokioinen.

The aim of my visit was familiarise myself with a qPCR procedure suitable for embryo sample gene expression studies and to learn how to evaluate morphology of bovine embryos during *in vitro* culture.

During my three months stay I participated in validation of selected candidate genes for embryo viability discovered in WP6 (Fertility and Reproduction) of the SABRE project that is aiming at identification of genes important for female fertility. We studied the expression of 6 genes in *in vitro* produced embryos derived from three different IVM media (PVA, PVA+GF, FBS+GF). The genes selected for validation were among the up regulated genes identified by cDNA microarray technology in the *in vivo* part of this project. Some genes known to be correlated with calf delivery in *in vitro* embryos (El-sayed *et al.*, 2006) were also analysed to assess the quality of these *in vitro* embryos. During the first two months we optimized the qPCR conditions for these genes, and made the plasmids of the gene products to be used for the standard curve. In the last month we performed the qPCR runs of these selected genes from the embryo samples. During my stay I also learned how to analyze qPCR results. The results obtained from this work were presented in EAAP 2009 conference in Barcelona by Kati Korhonen.

Another part of my visit was to familiarise myself with *in vitro* production of bovine embryos. We matured oocytes in different media mimicking reproductive environment related to diabetes and negative energy balance. After maturation *in vitro*, bovine oocytes from abattoir-derived ovaries were fertilized with frozen-thawed spermatozoa and embryos were cultured in G1 and G2 media. On day 3 we checked the cleaved oocytes, and on day 7 and 8 the embryo yield and morphological quality. We studied the influence of these maturation environments to embryo development, and cryopreserved oocytes and embryos for further analysis. We did not analyze these samples during my stay.

My stay at MTT Agrifood Research Finland was very fruitful and the collaborations within the SABRE project were a great opportunity for me to learn new techniques.

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