P-07

Detection of Optimal Time for Ovulation and Collecting *In Vivo* Matured Canine Oocytes

Min Kyu Kim[1], Goo Jang[1], Hyun Ju Oh[1], Yuda Heru Fibrianto, Hye Jin Kim[1], M. Shamim Hossein[1], Sung Keun Kang[1,2], Byeong Chun Lee[1,2] and Woo Suk Hwang[1,2,3]

[1]*Department of Theriogenology and Biotechnology, College of Veterinary Medicine, Seoul National University, Seoul 151-742, Korea*

[2]*The Xenotransplantation Research Center, Seoul National University Hospital, Seoul 110-744, Korea*

[3]*School of Agricultural Biotechnology, Seoul National University, Seoul 151-742, Korea*

The efficiency in *in vitro* maturation (IVM) of canine oocyte is very low compared to that of other mammalian species, limiting the development of assisted reproductive technology (ART) such as IVM, *in vitro* fertilization and culture, cryopreservation or somatic cell nuclear transfer in dogs. The purpose of the present study in the dogs is to analyze the correlation between progesterone level and vaginal cytology on ovulation time, and to collect *in vivo* matured oocytes for ART without the loss. Concentration of progesterone was measured by radioimmunoassay (RIA) and vaginal cytology was done by Diff-Quik® stain. To obtain the *in vivo* matured oocytes, we compared with three methods (bulbed needle, Tom cat catheter and bulbed needle & ligation) for flushing the oviduct of estrus bitches. Salpingectomy that excise the reproductive tracts was compared as the control. We observed high increase of progesterone concentration to 4~7 ng/ml means the ovulation and cornified index (CI) of vaginal cytology at this time was 83.34. Based on analysis of progesterone and vaginal cytology, the recovery rates of the *in vivo* matured oocytes in 12 dogs were 89.7% (salpingectomy), 68.9% (Tom cat catheter), 73.5% (bulbed needle) and 83.0% (bulbed needle & ligation). The results indicate that, bulbed needle & ligation showed similar recovery rates (72.0%) with high ratio of

oocyte grade compared to the salpingectomy (73.8%). In conclusion, we obtained efficiently *in vivo* matured oocytes using bulbed needle & ligation on ovulation time of estrus bithces with progesterone levels (4~7ng/ml) and CI (83.34).

This study was supported by grants from the Korean Ministry of Science and Technology (Biodiscovery) and the Biogreen 21-1000520030100000.