

**Establishment of Bovine Ovum Bank : I. Full Term Development
of Vitrified Hanwoo (Korean Cattle) *In Vitro* Matured Oocytes by
Minimum Volume Cooling (MVC) Method**

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This study was to test whether Hanwoo *in vitro* matured oocytes can be successfully cryopreserved by a new vitrification procedure using MVC method. For the vitrification, oocytes were pretreated in 10% ethylene glycol (EG10) for 5 - 10 min, exposed in EG30 for 30 sec, each oocytes were individually put on the inner wall of 0.25 ml straw, and then straws were directly plunged into LN₂. Thawing was taken by 4-step procedures [1.0 Msucrose (MS), 0.5 MS, 0.25 MS, and 0.125 MS] at 37°C. *In vitro* developmental capacity (survival, cleavage (≥ 2-cell) and blastocyst rates) in vitrified group was no significant difference compared to that in other treatment groups (exposed; 100.0, 74.4, 32.3% and control; 100.0, 78.3, 36.3%); high mean percentage of oocytes (91.2%) was survived, 69.4% of them were cleaved and 27.9% of cleaved embryos were developed to blastocyst. Especially, after transfer of *in vitro* developed embryos in vitrified group, four of six recipient animals were found to pregnant and three of them were ongoing pregnant by manual palpation at 250 days after transfer. However, among them, two healthy female calves (23 and 25kg) were born. This result demonstrates that MVC method is very appropriate freezing method for the Hanwoo *in vitro* matured oocytes and that ovum bank can be maintained efficiently by MVC cryopreservation method.

(Key words) *Bovine, in vitro matured oocyte, Vitrification, Thawing, In vitro survival, Full term development*