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**Study on the Factors Influencing Fertilization and Developmental Rate
of *In Vitro* Cultured Cat Oocytes Recovered from Ovaries
Collected at Different Stages of the Reproductive Cycle**

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The study was carried out to investigate the effects of morphology, reproductive cycle, incubation time and activation of oocytes on *in vitro* maturation of cat oocytes and development of IVM/IVF embryos.

The results were summarized as follows:

1. When recovered from ovaries collected at different stages of the reproductive cycle (inactive, follicular and luteal stage), the developmental rates of oocytes to GV and MI stage were 72.5% and 27.5%, 57.5% and 7.5%, 62.5% and 17.5%, respectively.
2. The developmental rates of oocytes with cumulus cells to GV and MI stage in different conditions of incubation (5% CO₂, 95% O₂ and 10% CO₂, 90% O₂) were 70.0% and 27.5%, 52.5% and 20.0%, 55.0% and 12.5%, respectively.
3. The developmental rates to GV and MI oocytes when cultured at different time of incubation (17~20, 21~24, 25~28 and 29~32 h) were 67.5% and 20.0%, 67.5% and 30.0%, 62.5% and 22.5%, 65.0% and 15.0%, respectively.
4. The fertilization and cleavage rates of freshly collected oocytes with and without cumulus cells were 72.5% and 25.0%, 37.5% and 7.5%, respectively. The rates were greater in oocytes with cumulus cells than those without cumulus cells.
5. The fertilization and cleavage rates of oocytes recovered from ovaries collected at different stages of the reproductive cycle (inactive, follicular and luteal stage) were 75.0% and 25.0%, 40.0% and 7.5%, 50.0% and 15.0%, respectively.

Key words: *Cat, Developmental rate, Reproductive cycle, Incubation time*