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FSH and LH can be substituted by eCG in maturation media for caprine embryo or parthenote production *in vitro*

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In most of the mammalian IVM (*in vitro* maturation), the basic medium is supplemented with serum and hormones. FSH (follicle stimulating hormone) and LH (luteinizing hormone) are generally used in *in vitro* maturation protocols to improve fertilization, early embryo development and cumulus expansion. Commercial eCG (equine chorionic gonadotrophin) is less expensive than FSH and LH. This study aimed to evaluate the substitution of FSH and LH by eCG on *in vitro* maturation, *in vitro* fertilization and *in vitro* embryo or parthenote development goat oocytes. Three experiments were performed: the first was to evaluate the dose effect of pregnant mare serum gonadotropin (PMSG) and human chorionic gonadotropin on *in vitro* maturation goat oocytes; the second was to compare the embryo development from caprine oocytes matured in a medium supplemented with eCG alone or in combination with hCG (human chorionic gonadotropin); the third was to compare the parthenogenetic activation and *in vitro* fertilization of *in vitro* matured caprine oocytes. The results indicated that: 1. Supplementation of 20 IU/mL eCG in maturation media significantly ($P<0.05$) increased maturation rate which was further enhanced by addition of 20IU hCG and may be used in *in vitro* maturation protocols. 2. Oocytes matured with 20IU/ml eCG had a good cytoplasmic maturation that allows normal embryo development up to blastocyst stage without addition of hCG. Thus, PMSG at 20IU/ml in maturation medium can be used to reduce the cost of *in vitro* embryo production. 3. The cleavage rate from caprine oocytes matured in a medium supplemented with 20IU/ml eCG was comparatively higher following parthenogenetic activation with ionomycin/6-DMAP (6-dimethylaminopurine) than IVF (*in vitro* fertilization).

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