Effect of vitirification of immature and in vitro matured buffalo oocytes on the developmental competence after thawing

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Abstract

Cryopreservation of oocytes collected from the animals of high genetic value, their subsequent utilization for production of embryos for transfer may provide an opportunity to replenish the valuable germplasm lost and the genetic improvement of the species. The aim of this work is studying the effect of vitirification of immature and in vitro matured buffalo oocytes on the developmental competence after thawing. The results revealed that EX and G quality vitrified immature oocytes showed significant (P<0.05) higher maturation rate with homogenous cytoplasm and intact zona after thawing (25 and 48 % resp) when compared with F and D buffalo oocytes (9 and 29% resp.). F and D oocytes characterized by significant higher (P<0.05) zona break and fragmented cytoplasm after thawing (47and 15%) than EX and G oocytes (26 and 8% resp.). The vitrified in vitro matured buffalo oocytes showed significant higher (P<0.05) fertilization rate (2nd pb) and polyspermia (30 and 16% resp.) when compared with F and D oocytes (11 and 11% resp.) Fand D in vitro matured buffalo oocytes showed high zona plucida break and fragment cytoplasm after thawing (37 and 42% resp.) when compared with EX and G oocytes (14 and 34% resp.).In conclusion: Vitrified / thawed EX and G immature and in vitro matured buffalo oocyte quality showed higher in vitro developmental competence than F and D oocytes

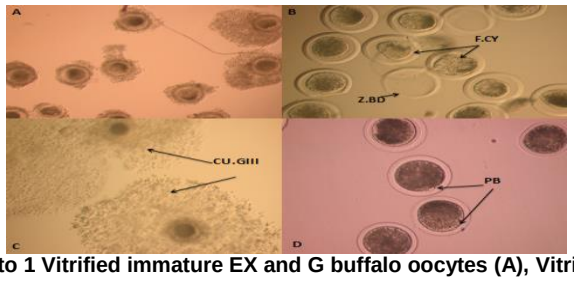


Photo 1 Vitrified immature EX and G buffalo oocytes (A), Vitrified immature buffalo F and D oocytes with zona break down (Z.BD), and fragmented cytoplasm (F.CY) (B), In vitro matured buffalo oocytes after thawing with cumulus expansion CU. GIII (C), and with PB (D).

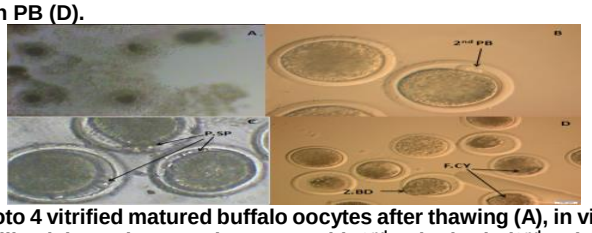


Photo 4 vitrified matured buffalo oocytes after thawing (A), in vitro fertilized thawed matured oocytes with 2nd polar body (2nd PB) (B), with polyspermia (S.SP) (C) and with zona break down (Z.BD0 and fragmented cytoplasm (F.CY) (D).

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