replicates) and Western Blotting (n = 135, 3 replicates), as well as differential-apoptotic staining (n = 203, 3 replicates). Data were analysed using the student T-test and ANOVA, and logistic and linear regression models were fitted, with the replicates set as a random effect.
Results: Bta-miR-665 was highly expressed in blastocyst culture medium (Log2Cq≈4.1 ± 0.4, $P < 0.01$) compared with non-blastocyst/degenerated culture medium. Supplementation of bta-miR-665 mimics to the culture medium significantly ($P < 0.05$) increased the blastocyst rate (42.12 ± 7.13%) (on Day 8) compared to control, mimic negative control (35.17 ± 6.08%, 33.75 ± 5.04%, respectively). On contrary, supplementation of bta-miR-665 inhibitor reduce the blastocyst rate (28.63 ± 5.87%) compared to inhibitor control and control (33.40 ± 4.90%, 35.17 ± 6.08%, respectively). In terms of embryo quality, inner cell mass (ICM) ratio was higher in miR-665 mimic (51.83 ± 3.23%) compared to control (43.31 ± 0.81%). As anticipated supplementing miR-655inhibitors had drastically declined ICM ratio (21.25 ± 0.35) compared to control (43.31 ± 0.8)($P < 0.005$). Expression of genes prolonging cellular DNA repair (CDK2/4,ERK1/2), regulating cell division (ERK,TGF-, STMN2) and blocking apoptosis (TNF-a,JNK/P38,PI3K/AKT) was significantly influenced at mRNA and protein level ($P < 0.05$).
Conclusions: Bta-miR-665 promotes the ability of zygotes to develop into blastocysts, decreases apoptosis of the embryonic inner cell mass (ICM) and increases embryo quality.
Acknowledgements: The work was funded by Ghent University GOA030-18 BOF.

References

Lin, X., Pavani, K.C., Smits, K., Deforce, D., Heindryckx, B., Van Soom, A., Peelman, L., 2019. Frontiers in Genetics 10, 757.
Pavani, K.C., Meese, T., Pascottini, O.B., Guan, X., Lin, X., Peelman, L., Hamacher, J., Van Nieuwerburgh, F., Deforce, D., Boel, A., Heindryckx, B., Tilleman, K., Van Soom, A., Gadella, B.M., Hendrix, A., Smits, K., 2022. Proceedings of the National Academy of Sciences of the United States of America 119 (12). e2122708119.

doi: 10.1016/j.anscip.2023.03.051

051
Non-surgical embryo recovery in superovulated and synchronous estrus-induced goats

J.F. Fonseca [a], A.L.R.S. Maia [b], L.V. Esteves [b], M.R. Silva [c], M.E.F. Oliveira [d], J.M.G. Souza-Fabjan [b], F.Z. Brandão [b]

[a] Embrapa Caprinos e Ovinos, Coronel Pacheco, Minas Gerais, Brazil
[b] Faculdade de Veterinária, Universidade Federal Fluminense, Niterói, Rio de Janeiro, Brazil
[c] Embrapa Gado de Leite, Juiz de Fora, Minas Gerais, Brazil
[d] Unesp, Jaboticabal, São Paulo, Brazil

Presenting author.
Jeferson Fonseca. E-mail: jeferson.fonseca@embrapa.br

Application: Non-surgical embryo recovery (NSER) can be performed in goats subjected to synchronous estrus induction only (SYNC) or followed by superovulation treatment (SOV) during the non-breeding season.
Introduction: Although undoubtedly efficient, embryo recovery by laparotomy is not typically performed in non-SOV or low-responder donors, and those females might be subjected to NSER. Thus, the objective of the present study was to test NSER success in both SOV and SYNC goats.
Materials and Methods: All goats received a 0.33 g progesterone device (CIDR) for 6 days. In G-SYNC (n = 10), goats were injected with 37.5 μg d-cloprostenol and 200 IU of eCG at 24 h before the device removal. In G-SOV (n = 10), goats received 37.5 μg d-cloprostenol both at device insertion (D0) and 24 h before its removal, plus 200 mg of pFSH administered twice daily in six decreasing doses (25-25-15-15-10-10%), starting 48 h before device removal. Females were naturally mated every 12 h while in oestrus. In addition, both groups received three doses of 2.2 mg/kg flunixin meglumine (24 h intervals) starting 84 h after onset of oestrus. Ovarian ultrasonography was performed one day before NSER and all goats received 37.5 μg d-cloprostenol on NSER day 6 am. Qualitative (%) data were compared by Fisher Exact test and quantitative data were subjected to ANOVA (mean ± SEM), both at a 5% minimum significance level.
Results: Oestrous response (90 vs 100%), duration of oestrus (38.3 ± 4.0 vs 32.8 ± 2.8 h), number of breedings (2.6 ± 0.3 vs 2.4 ± 0.3), percentage of goats ovulating (100 vs 90%) and interval from device removal to ovulation (67.6 ± 7.8 vs 81.6 ± 8.7 h), media fluid recovery efficiency (96.9 ± 1.0 vs 98.3 ± 0.6%) and ova/embryo recovery rate (64.1 ± 22.0 vs 74.1 ± 25.8%) were similar ($P > 0.05$) between G-SOV and G-SYNC, respectively. Corpus luteum count (10.8 ± 0.5 vs 1.6 ± 0.3) and the number of ova/embryos recovered (6.3 ± 1.9 vs 1.0 ± 0.2) were greater ($P < 0.05$) in G-SOV, compared to G-SYNC goats, respectively. The number of unfertilized ova (5.3 ± 1.9 vs 0.2 ± 0.1) was superior ($P < 0.05$) and viable embryos (0.7 ± 0.7 vs 0.6 ± 0.3) were similar ($P > 0.05$) in the comparison between G-SOV and G-SYNC goats, respectively.
Conclusions: The parameters obtained from superovulated and synchronized females allowed us to conclude that the NSER technique is ideal to be used in donor goats regardless of ovarian stimulation.
Acknowledgements: Fapemig (Project 00201-17), Embrapa (20.20.00.096.00.02.004), and Faperj.

doi: 10.1016/j.anscip.2023.03.052