

DAFTAR PUSTAKA

- Adifa, N.S., P. Astuti., dan D.T. Widayati. 2010. Pengaruh Penambahan Chorionic Gonadotrophin pada Medium Maturasi Terhadap Kemampuan Maturasi, Fertilisasi, dan Perkembangan Embrio Secara *In Vitro* Kambing Peranakan Ettawa. Buletin Peternakan 34(1): 8-15.
- Afriani, T., J. Hellyward., E. Purwanti., Jaswandi., F. Lyzmanto., dan M. Mundana. 2018. Manipulasi Embrio Pada Sapi. Padang: Universitas Andalas Press. ISBN: 978-602-6953-33-9. Hal: 29-30.
- Agrogiannis, G.D., S. Sifakis., E.S. Patsouris., and A.E. Konstantinidou. 2014. Insulin-Like Growth Factors In Embryonic And Fetal Growth And Skeletal Development (Review). Mol. Med. Rep. 10(2): 579-584.
- Aguiar, F. L. N., F. O. Lunardi., L. F. Lima., R. M. P. Rocha., J. B. Bruno., D. M. Magalhaes-Padilha., and J. R. Figueiredo. 2016. Insulin Improves In Vitro Survival Of Equine Preantral Follicles Enclosed In Ovarian Tissue And Reduces Reactive Oxygen Species Production After Culture. Theriogenology. 85(6): 1063-1069.
- Alvarez, G. M., G.C. Dalvit., M.V. Achi., M.S. Miguez., and P.D. Cetica. 2009. Immature Oocyte Quality And Maturation Competence Of Porcine Cumulus-Oocyte Complexes Subpopulations. Biocell. 33(3): 167-177.
- Arman, C. 2014. Reproduksi Ternak. Graha Ilmu. Yogyakarta. Hal: 29-41.
- Auclair, S., R. Uzbekov., S. Elis., L. Sanchez., I. Kireev., L. Lardic., R. Dalbies-Tran., and S. Uzbekova. 2013. Absence Of Cumulus Cells During *In Vitro* Maturation Affects Lipid Metabolism In Bovine Oocytes. Am J Physiol Endocrinol Metab. 67(6): E599–E613.
- Augustin, R., P. Pocar., C. Wrenzycki., H. Niemann., and B. Fischer. 2003. Mitogenic And Anti-Apoptotic Activity Of Insulin On Bovine Embryos Produced In Vitro. Reproduction. 126(1): 91-99.
- Blanco, M.R., S. Demydas., M.M. Moreno., and E. Genero. 2011. Developmental Competence of *In Vivo* and *In Vitro* Matured Oocytes: A review. Biotech and Mol Bio. 6(7): 156-165.
- Boediono, A., Y. Rusiantono., K. Mohamad., I. Djuwita., dan Y. Sukra. 1999. Produksi Embrio Kambing Dengan Teknologi Maturasi, Fertilisasi Dan Kultur *In Vitro*. Prosiding Seminar Nasional Peternakan dan Veterinar. 258-263.

- Boone, D.N., and A.V. Lee. 2012. Targeting The Insulin-Like Growth Factor Receptor: Developing Biomarkers From Gene Expression Profiling. *Crit. Rev. Oncog.* 17(2): 161-173.
- Brunet, A., L.B. Sweeney., J.F. Sturgill., K.F. Chua., P.L. Greer., and Y. Lin. 2004. Stress-Dependent Regulation Of FOXO Transcription Factors By The SIRT1 Deacetylase. *Science.* 303(5666): 2011-2015.
- Budiyanto, A., S. Gustari., D. Anggoro., D. Jatmoko., S. Nugraheni., E. W. Nugraha., dan D. Asta. 2013. Kualitas Morfologi Oosit Sapi Peranakan Ongole Yang Dikoleksi Secara *In Vitro* Menggunakan Variasi Waktu Transportasi. *Veterinaria Indonesia.* 1(1): 15-19.
- Byrne, A. T., J. Southgate, D. R. Brison, and H. J. Leese. 2002. Regulation Of Apoptosis In The Bovine Blastocyst By Insulin And The Insulin Like Growth Factor (IGF) Superfamily. *Molecular Reproduction and Development.* 62(4): 489-495.
- [DitjenPKH] Direktorat Perbibitan dan Produksi Ternak. 2011. Ditjen Peternakan dan Keswan Kementerian Pertanian Republic Indonesia.
- Downs, B.H. 1993. Factors Affecting the Resumption of Meiotic Maturation In Mammalian Oocytes. *Theriogenology.* 39(1): 65-79.
- Ducibella, T., D. Huneau., E. Angelichio., Z. Xu., R. M. Schultz., G. S. Kopf., R. Fissore., S. Madoux., and J.P. Ozil. 2002. Egg-To-Embryo Transition Is Driven By Differential Responses To Ca²⁺ Oscillation Number. *Developmental Biology.* 250(2): 280-291.
- Edson, M.A., A.K. Nagaraja., and M.M. Matzuk. 2009. The Mammalian Ovary From Genesis to Revelation. *Endocr Rev.* 30(6): 624-712.
- Febretrisiana, A., M.A. Setiadi., and N.W.K. Karja. 2015. Nuclear Maturation Rate Of Sheep Oocyte *In Vitro*: Effect Of Storage Duration And Ovary Temperature. *J Indonesian Trop Anim Agric.* 40(2): 93-99.
- Ferreira, E.M., A.A. Vireque., P.R. Adona., F.V. Meirelles., R.A. Ferriani., and P.A. Navarro. 2009. Cytoplasmic Maturation Of Bovine Oocytes: Structural and Biochemical Modifications and Acquisition Of Developmental Competence. *Theriogenology.* 71(5): 836-848.
- Ferreira, A. C. A., C. Maside, N. A. R. Sá, D. D. Guerreiro, H. H. V. Correia, J. Leiva-Revilla., and C. C. Campello. 2016. Balance Of Insulin And FSH Concentrations Improves The In Vitro Development Of Isolated Goat Preantral Follicles In Medium Containing GH. *Animal reproduction science.* (165): 1-10.

- Frasca, F., G. Pandini., P. Scalia., L. Sciacca., R. Mineo., A. Costantino., I.D. Goldfine., A. Belfiore., and R. Vigneri. 1999. Insulin Receptor Isoform A, A Newly Recognized, High-A Nity Insulin-Like Growth Factor II Receptor In Fetal And Cancer Cells. *Mol. Cell. Biol.* 19(5): 3278-3288.
- Gallagher, E.J., and D. LeRoith. 2010. The Proliferating Role Of Insulin And Insulin-Like Growth Factors In Cancer. *Trends Endocrinol. Metab.* 21(10): 610-618.
- Gandolfi, F. and T.A.L. Brevini. 2010. *In Vitro* Maturation of Farm Animal Oocytes: a useful tool for investigating the mechanisms leading to full-term development. *Reprod Fertil Dev.* 22(3): 495-507.
- Gardner, D.K., T.B. Pool., and M. Lane. 2000. Embryo Nutrition and Energy Metabolism and its Relationship to Embryo Growth, Differentiation, and Viability. *Semin Reprod Med.* 18(212): 205-18.
- Garnsworthy, P.C., A.A. Fouladi-Nashta., G.E. Mann., K.D. Sinclair., and R. Webb. 2009. Effect Of Dietary-Induced Changes In Plasma Insulin Concentrations During The Early Post Partum Period On Pregnancy Rate In Dairy Cows. *Reproduction.* 137(4): 759-768.
- Ghosh, P., N.M. Dahms., and S. Kornfeld. 2003. Mannose 6-Phosphate Receptors: New Twists In The Tale. *Nat. Rev. Mol. Cell Biol.* 4(3): 202-212.
- Gordon, I. 2003. Laboratory Production of Cattle Embryos. 2nd edition. Willingford UK: CABI Publishing. Hal: 112-157.
- Goto, K., T. Yasuzuki., F. Watani., and T. Shiniciro. 1995. *In Vitro* Development Of Bovine Oocytes Collected Ovaries Of Individual Cows After Fertilization. *J Anim. Rep. Science.* 36(2): 110-113.
- Hafez, E.S.E., and B. Hafez. 2000. Folliculogenesis, Egg Maturation and Ovulation. In: Hafez B and Hafez ESE. *Reproduction in Farm Animals.* 7th Ed. Philadelphia: Lea and Febiger. Hal: 68-81.
- Handarini, R., D. Sudrajat., dan D. Hardiansyah. 2014. Kualitas Oosit dari Ovarium Sapi Peranakan Ongole (PO) Pada Fase Folikuler dan Luteal. *Jurnal Pertanian* 2(5): 89-94.
- Hasbi, S. Gustina., N.W. K. Karja., I. Supriatna., dan M.A. Setiadi. 2018. Efektivitas Insulin-Like Growth Factor-I (IGF-I) dalam Media Maturasi *In Vitro* Pada Pematangan Inti dan Fertilisasi Oosit Sapi Bali. *Acta Veterinaria Indonesiana* 1(6): 24-29.
- Hendri, Y. 2013. Dinamika pengembangan Sapi Pesisir Sebagai Sapi Lokal Sumatera Barat. *Jurnal Litbang Pertanian.* 1(32): 39-45.

- Himpe, E., and R. Kooijman. 2009. Insulin-like growth factor-I receptor signal transduction and the Janus Kinase/Signal Transducer and Activator of Transcription (JAK-STAT) pathway. *BioFactors*. 35(1): 76-81.
- Hyttel, P., T. Fair., H. Callsen., and T. Greve. 1997. Oocyte Growth, Capacitation and Final Maturation in Cattle. *Theriogenology*. 47(1): 23–32.
- Janssen, J.A., and S.W. Lamberts. 2002. The Role Of IGF-I In The Development Of Cardiovascular Disease In Type 2 Diabetes Mellitus: Is Prevention Possible? *Eur. J Endocrinol.* 146(4): 467-477.
- Landau, S., R. Braw-Tal., M. Kaim., A. Bor., and I. Bruckental. 2000. Preovulatory Follicular Status And Diet Affect The Insulin And Glucose Content Of Follicles In High-Yielding Dairy Cows. *Anim Reprod Sci*. 64(3-4): 181-197.
- Laskowski, D., Y. Sjunnesson, P. Humblot, G. Andersson, H. Gustafsson, and R. Bage. 2016. The Functional Role Of Insulin In Fertility And Embryonic Development-What can we learn from the bovine model?.*Theriogenology*. 86(1): 457-464.
- Laskowski, D., R. Bage, P. Humblot, G. Andersson, M. A. Sirard, and Y. Sjunnesson, 2017. Insulin during in vitro oocyte maturation has an impact on development, mitochondria, and cytoskeleton in bovine day 8 blastocysts. *Theriogenology*. (101): 15-25.
- Lehninger, A.L. 1991. Dasar dasar biokimia. Jilid 1 dan 3. Alih Bahasa Thenawidjaja M. IPB. Penerbit Erlangga Jakarta.
- Lequarre, S.A. 2005. Influence of Antral Follicle Size on Oocyte Characteristics and Embryo Development in the Bovine. *Theriogenology*. 63(3): 841-859.
- LeRoith, D., C. Bondy., S. Yakar., J.L. Liu., and A. Butler. 2001. The Somatomedin Hypothesis. *Endocr. Rev.* 22(1): 53-74.
- LeRoith, D., H. Werner., D. B. Johnson., and C.T. Roberts Jr. 1995. Molecular and cellular aspects of the insulin-like growth factor I receptor. *Endocrine reviews*. 16(2): 143-163.
- Lewitt, M.S., and G.W. Boyd. 2019. The Role of Insulin-Like Growth Factors and Insulin-Like Growth Factor-Binding Proteins in the Nervous System. *Biochemistry Insights*. (12): 1-18.
- Li, Y., Q. Liu., Q. Chen., X. Yan., and N. Li. 2016. *Insulin Like Growth Factor-1* Promotes Cumulus Cell Expansion And Nuclear Maturation Of Oocytes Via Pi3K/Akt Pathway. *Int J Clin Exp Pathol.* 9(11): 11436-11443.

- Lonergan, P., P. Monaghan., D. Rizos., M.P. Boland., and I. Gordon. 1994. Effect of Follicle Size of Bovine Oocyte Quality and Developmental Competence Following Maturation Fertilization and Culture *In Vitro*. Mol Reprod Dev. 37(1): 48-53.
- Lv, L., Y. Wenbin., L. Wenzhong., R. Youshe., L. Fuzhong., L. Kyung-Bon., and W.S. Goerge. 2010. Effect of Oocyte Selection, Estradiol and Antioxidant Treatment on *In Vitro* Maturation of Oocyte Collected From Prepubertal Boer Goats. Italian J Anim Sci. 9(1): 50-53.
- Marchal, R., M. Caillaud., A. Martoriati., N. Ge'rard., P. Mermillod., and G. Goudet. 2003. Effect of Growth Hormone (GH) on In Vitro Nuclear and Cytoplasmic Oocyte Maturation, Cumulus Expansion, Hyaluronan Synthases, and Connexins 32 and 43 Expression, and GH Receptor Messenger RNA Expression in Equine and Porcine Species. Biology Of Reproduction. 69(3): 1013–1022.
- McCaffery, F.H., R. Leask., S.C. Riely., and E.E. Telfer. 2000. Culture Of Bovine Preantral Follicles In A Serum-Free System: Markers For Assessment Of Growth And Development. Biol Reprod. 63(1): 267–273.
- Miyano, T. 2018. *In Vitro* Growth Of Bovine Oocyte. Journal of applied animal science. 11: 13-16.
- Muhajir, M., N.W.K. Karja., M.A. Setiadi., dan I.K.M. Adnyane. 2018. Kompetensi Maturasi Oosit *In Vitro* dan Kajian Histologi Folikel dari Ovarium Domba Pasca Penyimpanan Pada Suhu 4°C. Acta Veterinaria Indonesiana. 6(2): 17-22.
- Nanda, S. 2017. Tingkat Maturasi Oosit dan Perkembangan Awal Embrio Sapi Dengan Penambahan Insulin pada Media Maturasi dan atau Media Kultur Secara *In Vitro*. [Tesis]. Bogor: Sekolah Pascasarjana Institut Pertanian Bogor.
- Nanda, S., N. W. K. Karja., dan M. A. Setiadi. 2019. Efektifitas Penambahan Insulin dalam Media Maturasi dan atau Media Kultur pada Tingkat Maturasi Oosit dan Perkembangan Awal Embrio Sapi Secara *In Vitro*. Jurnal Sain Veteriner. 37(2): 135-142.
- Neirijnck, Y., M. D. Papaioannou., and S. Nef. 2019. The Insulin/IGF System In Mammalian Sexual Development And Reproduction. International journal of molecular sciences. 20(18): 1-18.
- Parera, H. 2014. Pengaruh Ukuran Ovarium dan Diameter Oosit Terhadap Kualitas Morfologi Oosit Sapi Bali-Timor yang Dikoleksi Secara *In Vitro*. Jurnal Kajian Veteriner. 2(2): 143-150.

- Parera, H. dan V. Lenda. 2019. Pengaruh Corpus Luteum Dan Folikel Dominan Terhadap Kualitas Morfologi Oosit Sapi Bali-Timor. *Jurnal Kajian Veteriner*. 3(1): 63-70.
- Permana, R.M.Y., Widjiati., B. Utomo., dan T.I. Restiadi. 2015. Pengaruh Suplementasi *Insulin Transferrin Selenium* (ITS) pada Media Maturasi TCM-199 terhadap Diameter Oosit Sapi. *Veterinaria Medika*. 8(3): 245-250.
- Ptak, G., P. Loi., M. Dattena., M. Tischner., and P. Cappai. 1999. Off Spring Fromone-Month Old Lambs: studies on the developmental capability of prepubertal oocytes. *Biol Reprod*. 61(6): 1568-1574.
- Rahma, N. 2020. Pengaruh Waktu Transportasi dan Status Reproduksi Ovarium Terhadap Kuantitas dan Kualitas Oosit Serta Tingkat Maturasi Secara *In Vitro* pada Sapi Simmental Cross. [Tesis]. Program Studi Pascasarjana Universitas Andalas.
- Richards, J.S., and S.A. Pangas. 2010. The Ovary: Basic biology and clinical implications. 120(4): 963-972.
- Saladin, R. 1983. Penampilan Sifat-sifat Produksi dan Reproduksi Sapi Lokal Pesisir Selatan di Provinsi Sumatera Barat. [Disertasi]. Bogor. Fakultas Pascasarjana Institut Pertanian Bogor.
- Sarfstein, R., and H. Werner. 2013. Minireview: Nuclear Insulin And Insulin-Like Growth Factor-1 Receptors: A Novel Paradigm In Signal Transduction. *Endocrinology*. 154(5): 1672-1679.
- Simpson, A., W. Petnga., V.M. Macaulay., U. Weyer-Czernilofsky., and T. Bogenrieder. 2017. Insulin-Like Growth Factor (IGF) Pathway Targeting in Cancer: Role of the IGF Axis and Opportunities for Future Combination Studies. *Target. Oncol*. 12: 571-597.
- Sirard, M.A., F. Richard., P. Blondin., and C. Robert. 2006. Contribution of the Oocytes to Embryo Quality. *Theriogenology*. 65(1): 126-136.
- Sjaastad, O.V., K. Hove., and O Sand. 2003. The physiology of domestic animals. 1. ed. Oslo: Scandinavian Veterinary Press.
- Steel, R. G. D. dan J. H. Torrie. 1991. Prinsip dan Prosedur Statistika. PT. Gramedia Pustaka Utama. Jakarta.
- Syaiful, F.L., R. Saladin., Jaswandi., dan Z. Udin. 2011. Pengaruh Waktu Fertilisasi dan Sistem Inkubasi yang Berbeda Terhadap Tingkat Fertilisasi Sapi Lokal Secara *In Vitro*. *Jurnal Peternakan Indonesia* 13(1): 27-35.

- Syamsuddin, R. 2014. Pengaruh Diameter Oosit Sapi Bali Terhadap Tingkat Kematangan Inti Oosit Secara *In Vitro*. [Skripsi]. Makassar. Program Studi Produksi Ternak Universitas Hasanuddin.
- Toori, M.A., E. Mosavi., M. Nikseresht., M.J. Barmak., and R. Mahmoudi. 2014. Influence of *Insulin Like Growth Factor-I* on Maturation and Fertilization Rate of Immature Oocyte and Embryo Development in NMRI Mouse with TCM199 and α -MEM Medium. Journal of Clinical and Diagnostic Research. 8(12): AC05-AC08.
- Turner, C.D., dan J.T. Bagnara. 1988. Endokrinologi umum edisi keenam, penerjemah Harsojo, Yogyakarta. Airlangga University Press.
- Widyastuti, R., C. Khoirinaya., M.R. Ridlo., M.A. Rizky., dan A. Syamsunarno. 2017. Perbandingan Viabilitas Oosit Pascavitrifikasi pada Dua Tingkat Konsentrasi Sukrosa yang Berbeda. MKB. 4(49): 252-258.
- Xia, P., F.R. Tekpetey., and D.T. Armstrong. 1994. Effect of IGF-I On Pig Oocyte Maturation, Fertilization, And Early Embryonic Development *In Vitro*, And On Granulosa And Cumulus Cell Biosynthetic Activity. Mol Reprod Dev. 38(4): 373-379.
- Zhang, H., A.M. Pelzer., D.T. Kiang., and D. Yee. 2007. Down-regulation of Type I Insulin-like Growth Factor Receptor Increases Sensitivity of Breast Cancer Cells to Insulin. Cancer Res. 67(1): 391-397.
- Zhang, L. 1991. The Effect Of Insulin On Maturation And Development Of In Vitro-Fertilized Bovine Oocytes. Theriogenology. 35: 301.
- Zhou, P., Y.G. Wu., Q. Li., G.C. Lan., G. Wang., D. Gao., and J.H. Tan. 2008. The Interactions Between Cysteamine, Cystine and Cumulus Cells Increase Theintracellular Glutathione Level and Developmental Capacity of Goatcumulus-Denuded Oocytes. Reproduction. 135(5): 605-611.