

9. Literaturverzeichnis

ABERDAM, E., HANSKI, E., DEKEL, N. (1987)

Maintenance of meiotic arrest in isolated rat oocytes by the invasive adenylyl cyclase of *Bordetella pertussis*
Biol. Reprod. **36**, 530-535

ADRAIN, C., MARTIN, S.J. (2001)

The mitochondrial apoptosome: a killer unleashed by the cytochrome seas
Trends in Biochem Sci **26**; Nr. 6: 390-397

AKUFO, E., PHELPS, D.A., TIBBITTS, F.D., FOOTE, W.D. (1988)

Influence of follicular components on oocyte meiosis in vitro
Theriogenology **30**(3):643-648

ALBERTINI, D.F. (1987)

Cytoplasmic reorganization during the resumption of meiosis in cultured preovulatory rat oocytes
Dev. Biol. **120**:121-131

ALBERTINI, D.F., SANFINS, A., COMBELLES, C.M. (2003)

Origins and manifestations of oocyte maturation competencies
Reprod. Biomed. Online **6**, 410-415

ALBERTINI, D. (2004)

Oocyte-granulosa cell interactions
in: Essential IVF: Basic Research and Clinical Applications
Van Blerkom, Gregory
Kluwer Academic Publishers, 43-58

ALBERTS, B., BRAY, D., JOHNSON, A., LEWIS, J., RAFF, M., ROBERTS, K.

WALTER, P. (2001)

Lehrbuch der Molekularen Zellbiologie
2. Auflage
Wiley-VCH Verlag GmbH, Weinheim

ALISCH, A., RÜPING, K., KÖSTER, F., SCHÖPPER, B., BAUM, M., FINAS, D.,

FELBERBAUM, R., DOR, S., AL-HASANI, S., DIEDRICH, K. (2003)

Die Apoptoseaktivität in Cumuluszellen als ein Indikator der Eizellqualität in der Assistierten Reproduktion

Zentralbl Gynakol 2003;**125**:452-457

ALM, H., TORNER, H., KUZMINA, T., LÖHRKE, B., VIERGUTZ, T. (1995)

Effect of prolactin on in vitro maturation of bovine oocytes
Reprod. Domest. Anim. 1995;**30**:430

ALM, H., TORNER, H., HELEIL, B., SRSEN, V., KUZMINA, T. (2000)

Apoptosis and pyknosis in cumulus cells from bovine cumulus-oocyte complexes before and after maturation
Theriogenology **53**(1), 447

ALLWORTH, A.E., ALBERTINI, D.F. (1993)

Meiotic maturation in cultured bovine oocytes is accompanied by remodeling of the cumulus cell cytoskeleton
Dev. Biol. 1993 **158**(1):101-12

- ARLOTTA, T., SCHWARTZ, J.L., FIRST, N.L., LEIBFRIED-RUTLEDGE, M.L. (1996)**
Aspects of follicle and oocyte stage that affect in vitro maturation and development of bovine oocytes
Theriogenology **45**:943-956
- AVERY, B., HAY-SCHMIDT, A., HYTEL, P., GREVE, T. (1998)**
Embryo development, oocyte morphology, and kinetics of meiotic maturation in bovine oocytes exposed to 6-dimethylaminopurine prior to in vitro maturation
Mol. Reprod. Dev. **50**, 334-344
- BALL, G.D., LEIBFRIED, M.L., LENZ, R.W., AX, A.L., BAVISTER, B.D., FIRST, N.L. (1983)**
Factors affecting successful in vitro fertilization of bovine follicular oocytes
Biol. Reprod. **28**:717-25
- BAO, S., OBATA, Y., CARROLL, J. (2000)**
Epigenetic modifications necessary for normal development are established during oocyte growth in mice
Biol. Reprod. **62**:616-621
- BARNETT, D.K., KIMURA, J., BAVISTER, B.D. (1996)**
Translocation of active mitochondria during hamster preimplantation embryo development studies by confocal laser scanning microscopy
Dev. Dyn. **205**:64-72
- BARNETT, D.K., CLAYTON, M.K., KIMURA, J., BAVISTER, B.D. (1997)**
Glucose and phosphate toxicity in hamster preimplantation embryos involves disruption of cellular organization, including distribution of active mitochondria
Mol. Reprod. Dev. **48**:227-237
- BARRITT, J.A., BRENNER, C.A., COHEN, J., MATT, D.W. (1999)**
Mitochondrial DNA rearrangements in human oocytes and embryos
Mol. Hum. Reprod. **5**(10):927-933
- BARRITT, J.A., KOKOT, M., COHEN, J., STEUERWALD, N., BRENNER, C.A. (2002)**
Quantification of human ooplasmic mitochondria
Reprod. BioMed. Online **4**:243-7
- BARTMANN, A.K., ROMAO, G.S., RAMOS, E., FERRIANI, R.A. (2004)**
Why do older women have poor implantation rates ? A possible role of the mitochondria
J. Assist. Reprod. Gen. **21**(3):79-83
- BAVISTER, B.D. (2000)**
Interactions between embryos and the culture milieu
Theriogenology **53**:619-626
- BAVISTER, B.D., SQUIRRELL, J.M. (2000)**
Mitochondrial distribution and function in oocytes and early embryos
Hum. Reprod. Vol. **15**(Suppl. 2):189-198

BECKERS, J.F., DRION, P.V., FIGUEIREDO, J.R., GOFFIN, L., PIROTTIN, D., ECTORS, F.J. (1996)

The ovarian follicle in cow: in vivo growth and in vitro culture
Reprod.Dom.Anim. **31**:543-548

BEHALOVA, E., GREVE, T. (1993)

Penetration rate of cumulus-enclosed versus denuded bovine eggs fertilized in vitro
Theriogenology **39**:186

BERG, U., BREM, G. (1989)

In vitro production of bovine blastocysts by in vitro maturation and fertilization of oocytes and subsequent in vitro culture
Theriogenology **33**:195

BERGSTROM, C., PRITCHARD J. (1998)

Germline bottlenecks and the evolutionary maintenance of mitochondrial genomes
Genetics **149**:2135-2146

BERNARDI, P., COLONNA, R., CONSTANTINI, P., ERIKSSON, O., FONTAINE, E., ICHAS, F. (1998)

The mitochondrial permeability transition
Biofactors **8**(3-4):273-81

BHOJWANI, S., VAJTA, G., CALLESEN, H., ROSCHLAU, K., KUWER, A., BECKER, F., ALM, H., TORNER, H., KANITZ, W., POEHLAND, R. (2005)

Developmental competence of HMC(TM) derived bovine cloned embryos obtained from somatic cell nuclear transfer of adult fibroblasts and granulosa cells
J. Reprod. Dev. **51**(4):465-75

BILLIG, H., CHUN, S.Y., EISENHAUER, K., HSUEH, A.J. (1996)

Gonadal cell apoptosis: hormone-regulated cell demise
Hum. Reprod. Update **2**:103-17

BLERKOM, J.V. (1977)

Molecular approaches to the study of oocyte maturation and embryonic development
in: Immunobiology of gametes
Edidin, M., Johnson, M.H.
Cambridge University Press

BLONDIN, P., COENEN, K., GUILBAULT, L.A., SIRARD, M.A. (1997)

In vitro production of bovine embryos: development competence is acquired before maturation
Theriogenology **47**:1061-1075

BLONDIN, P., SIRARD, M.A. (1995)

Oocyte and follicular morphology as determining characteristics for developmental competence in bovine oocytes
Mol. Reprod. Dev. **41**:54-62

- BLONDIN, P., BOUSQUET, D., TWAGIRAMUNGU, H., BARNES, F., SIRARD, M.A. (2002)**
Manipulation of follicular development to produce developmentally competent bovine oocytes
Biol Reprod **66**:38-43
- BOONE, D.L., TSANG, B.K. (1998)**
Caspase-3 in the rat ovary: localization and possible role in follicular atresia and luteal regression
Biol Reprod **58**:1533-9
- BOUSQUET, D., TWAGIRAMUNGU, H., MORIN, N., BRISSON, C., CARBONEAU, G., DUROCHER, J. (1999)**
In vitro production in the cow: an effective alternative to the conventional embryo production approach
Theriogenology **51**:59-70
- BOATRIGHT, K.M., SALVESEN, G.S. (2003)**
Caspase activation
Biochem. Soc. Symp. **70**:233
- BOSSY-WETZEL, E., GREEN, D.R. (1999)**
Apoptosis: Checkpoint at the mitochondrial frontier
Mutation Res **434**:243-251
- BRACKET, B., ZUELKE, K. (1993)**
Analysis of factors involved in the in vitro production of bovine embryos
Theriogenology **39**:43-64
- BRACKETT, B.G., BOUSQUET, D., BOICE, M.L., DONAWICK, W.J., EVANS, J.F., DRESSEL, M.A. (1982)**
Normal development following in vitro fertilisation in the cow
Biol. Reprod. **27**:147-158
- BRENNER, C.A., WOLNY, Y.M., BARRITT, J.A., MATT, D.W., MUNNE, S., COHEN, J. (1998)**
Mitochondrial DNA depletion in human oocytes and embryos
Mol Hum Reprod **4**(9):887-892
- BREVINI, T.A.L., VASSENA, R., FRANCISCI, C., GANDOLFI, F. (2005)**
Role of adenosine triphosphat, active mitochondria and microtubules in the acquisition of developmental competence of parthenogenetically activated pig oocytes
Biol. Reprod. **2**(5):1218-23
- BROWER, P.T., SCHULTZ, R.M. (1982)**
Intercellular communication between granulosa cells and mouse oocytes: existence and possible nutritional role during oocyte growth
Dev. Biol. **90**:144-153
- BUCCIONE, R., SCHROEDER, A.C., EPPIG, J.J. (1990)**
Interactions between somatic cells and germ cells throughout mammalian oogenesis
Biol. Reprod. **43**:543-547

CAIN, K. et al. (1999)

Caspase activation involves the formation of the apoptosome, a large caspase-activating complex
J. Biol. Chem. **274**:22686-22692

CALARCO, P.G. (1995)

Polarization of mitochondria in the unfertilised mouse oocytes
Dev. Gen. **16**:36-46

CARABATSOS, M.J., SELLITTO, C., GOODENOUGH, D.A., ALBERTINI, D.F. (2000)

Oocyte-granulosa cell heterologous gap junctions are required for the coordination of nuclear and cytoplasmic meiotic competence
Dev. Biol. **226**:167-179

CAROLAN, C.P., MONAGHAN, P., GALLAGHER, M., GORDON, I. (1994)

Effect of recovery method on yield of bovine oocytes per ovary and their development competence after maturation, fertilization and culture in vitro
Theriogenology **41**:1061-1068

CHANG, M.C. (1955)

The maturation of rabbit oocytes in culture and their activation, fertilization and subsequent development in fallopian tubes
J. Exp. Zool. **128**:187-199

CHANG, M.C. (1959)

Fertilization of rabbit ova in vitro
Nature **179**:466-467

CHENG, E.H., KIRSCH, D.G., CLEM, R.J., RAVI, R., KASTAN, M.B., BEDI, A., UENO, K., HARDWICK, J.M. (1997)

Conversion of Bcl-2 to a Bax-like death effector by caspases
Science **278**(5345):1966-8

CHIAN, R.C., NAKAHARA, H., NIWA, K., FUNAHASHI, H. (1992)

Fertilization and early cleavage in vitro of ageing bovine oocytes after maturation in culture
Theriogenology **36**:665-672

CHIAN, R.C., PARK, C.K., SIRARD, M.A. (1996)

Cumulus cells act as a sperm trap during in vitro fertilization of bovine oocytes
Theriogenology **45**:258

CHINNERY, P. (2004)

New approaches to the treatment of mitochondrial disorders
Reprod. BioMed. Online **8**:16-23

CHIQUOINE, A.D. (1954)

The identification, origin, and migration of the primordial germ cells in the mouse embryo
Anat.Rec. **118**:135-45

CHRISTODOULOU, J. (2000)

Genetic defects causing human mitochondrial respiratory chain disorders and disease
Hum. Reprod. **15** (Suppl 2):28-43

CHOI, S.H., FUNAHASHI, H., NIWA, K. (1998)

Both bovine oocytes and cumulus cells produce plasminogen activator during in vitro maturation
Theriogenology **49**:309

COGNIE, Y., BENOIT, F., POULIN, N., KHATIR, H., DRIANCOURT, M.A. (1998)

Effect of follicle size and of the FecB *Booroola* gene on oocyte function in sheep
J. Reprod. Fertil. **112**:379-386

COHEN, J., SCOTT, R., SCHIMMEL, T., LEVRON, J., WILLADSEN, S. (1997)

Birth of an infant after transfer of anucleate donor oocyte cytoplasm into recipient eggs
Lancet **350**:186-187

COLLEONI, S., LUCIANO, A.M., GANDOLFI, F. (2004)

Cumulus-oocyte communications in the horse: role of the breeding season and the maturation medium
Reprod. Dom. Anim. **39**(2):70-5

COMBELLES, C.M., ALBERTINI, D.F. (2001)

Microtubule patterning during meiotic maturation in mouse oocytes is determined by cell cycle-specific sorting and redistribution of γ-tubulin
Dev. Biol. **239**:281-294

CONNORS, S.A., KANATSU-SHINOHARA, M., SCHULTZ, R.M., KOPF, G.S. (1988)

Involvement of the cytoskeleton in the movement of cortical granules during oocyte maturation, and cortical granule anchoring in mouse eggs
Dev. Biol. **200**:103-115

CONTI, M., ANDERSEN, C.B., RICHARD, F.J., SHITSUKAWA, K., TSAFRIRI, A. (1998)

Role of cyclic nucleotide phosphodiesterases in resumption of meiosis
Mol. Cell. Endocrinol. **145**:9-14

CONTI, M., ANDERSEN, C.B., RICHARD, F., MEHATS, C., CHUN, S.Y., HORNER, K.,

JIN, C., TSAFRIRI, A. (2002)

Role of cyclic nucleotide signaling in oocyte maturation
Mol. Cell. Endocrinol. **187**:153-159

CORN, C.M., HAUSER-KRONBERGER, C., MOSER, M., TEWS, G., EBNER, T. (2005)

Predictive value of cumulus cell apoptosis with regard to blastocyst development of corresponding gametes
Fertil. Steril. **84**(3):627-633

COX, J.F. (1991)

Effect of the cumulus cells on in vitro fertilization of in vitro matured cow and sheep oocytes
Theriogenology **35**:191

COX, J.F., HORMAZABAL, J., SANTA MARIA, A. (1993)

Effect of the cumulus on in vitro fertilization of bovine matured oocytes
Theriogenology **40**:1259-67

CRAN, D.G., MOOR, R.M., HAY, M.F. (1980)

Fine structure of the sheep oocytes during antral follicle development
J. Reprod. Fertil. **59**:125-132

CRAN, D.G. (1985)

Qualitative and quantitative structural changes during pig oocyte maturation
J. Reprod. Fertil. **74**:237-245

CRYNS, V., YUAN, J. (1998)

Proteases to die for
Genes Dev. **12**(11):1551-70

CUMMINS, J.M. (1998)

Mitochondrial DNA in mammalian reproduction
Reviews of Reproduction **3**:172-182

CUMMINS, J.M. (2002)

The role of mitochondria during oogenesis, fertilization and embryogenesis
Reprod. BioMed. Online **4**(2):176-182

CUMMINS, J.M. (2004)

The role of mitochondria in the establishment of oocyte functional competence
European Journal of Obstetrics and Gynecology and Reproductive Biology
115S, S23-S29

DEDIEU, T., GALL, L., CROZET, N., SEVELLEC, C., RUFFINI, S. (1996)

Mitogen-activated protein kinase activity during goat oocyte maturation and
the acquisition of meiotic competence
Mol. Reprod. Dev. **45**:351-358

DEKEL, N., BEERS, W.H. (1978)

Rat oocyte maturation in vitro: relief of cyclic AMP inhibition with
gonadotropins
Proc. Nat. Acad. Sci. USA **75**:4369-4373

DE LA FUENTE, R., EPPIG, J.J. (2001)

Transcriptional activity of the mouse oocyte genome: companion granulosa
cells modulate transcription and chromatin remodeling
Dev. Biol. **229**:224-236

DEL CAMPO, M.R., DONOSO, M.X., PARRISH, J.J., GINTHER, O.J. (1990)

In vitro fertilization of in vitro-matured equine oocytes
J. Equine Vet. Sci. **10**:18-22

DE LOOS, F., VAN VLIET, C., VAN MAURIK, P., KRUIP, T.A.M. (1989)

Morphology of immature bovine oocytes
Gamete Res. **24**:197-204

DE LOOS, F., KASTROP, P., VAN MAURIK P., VAN BENEDEN, T.H., KRUIP, T.A. (1991)

Heterologous cell contacts and metabolic coupling in bovine cumulus oocyte
complexes
Mol. Reprod. Dev. **28**(3):255-9

DE LOOS, F., VAN MAURIK, P., VAN BENEDEN, T., KRUIP, T.A.M. (1992)

Structural aspects of bovine oocyte maturation in vitro
Mol. Reprod. Dev. **31**:208-214

DE LOS SANTOS, M.J., ANDERSON, D.J., RACOWSKY, C., HILL, J.A. (2000)

Presence of Fas-Fas Ligand System and Bcl-2 gene products in cells and fluids from gonadotropin-stimulated human ovaries
Biol. Reprod. **63**:1811-1816

DE POL, A., VACCINA, F., FORABOSCO, A., CAVAZZUTTI, E., MARZONA, L. (1997)

Apoptosis of germ cells during human prenatal oogenesis
Hum. Reprod. **(12)**:10:2235-41

DE VANTERY, C., STUTZ, A., VASSALLI, J.D., SCHORDERET-SLATKINE, S. (1997)

Acquisition of meiotic competence in growing mouse oocytes is controlled at both translational and posttranslational levels
Dev. Biol. **187**:43-54

DE WITT, A.A.C., KRUIP, T.A.M. (2001)

Bovine cumulus-oocyte-complex-quality is reflected in sensitivity for alpha-aminitin, oocyte diameter and developmental capacity
Anim. Reprod. Sci. **65**:51-65

DOMINKO, T., FIRST, N.L. (1997)

Timing of meiotic progression in bovine oocytes and its effect on early embryo development
Mol. Reprod. Dev. **47**:456-467

DONAHUE, R.D. (1968)

Maturation of the mouse oocyte in vitro: 1. Sequence and timing of nuclear progression
J. Exp. Zool. **196**:237-250

DOWNS, S.M. (1995)

The influence of glucose, cumulus cells, and metabolic coupling on ATP levels and meiotic control in the isolated mouse oocyte
Dev. Biol. **167**:502-512

DOWNS, S.M. (2001)

A gap-junction-mediated signal, rather than an external paracrine factor, predominates during meiotic induction in isolated mouse oocytes
Zygote **9**:71-82

DOWNS, S.M., EPPIG, J.J. (1984)

Cyclic adenosine monophosphate and ovarian follicular fluid act synergistically to inhibit mouse oocyte maturation
Endocrinology **114**:418-427

DOWNS, S.M., SCHROEDER, A.C., EPPIG, J.J. (1986)

Serum maintains the fertilizability of mouse oocytes matured in vitro by preventing the hardening of the zona pellucida
Gamete Res. **15**:115-22

DOWNS, S.M., DANIEL, S.A.J., EPIG, J.J. (1988)

Induction of maturation in cumulus cell-enclosed mouse oocytes by follicle-stimulating hormone and epidermal growth factor: evidence for a positive stimulus of somatic cell origin
J. Exp. Zool. **245**:86-96

DOWNS, S.M., DANIEL, S.A.J., BORNSLAEGER, E.A., HOPPE, P.C., EPIG, J.J. (1989)

Maintenance of meiotic arrest in mouse oocytes by purines: modulation of cAMP levels and cAMP phosphodiesterase activity
Gam. Res. **23**:323-334

DRIANCOURT, M.A., THUEL, B. (1998)

Control of oocyte growth and maturation by follicular cells and molecules present in follicular fluid. A review.
Reprod. Nutr. Dev. **38**:345-362

DUMMOLARD, R., HAMMAR, K., PORTERFIELD, M., SMITH, P.J., CIBERT, C. (2003)

Mitochondrial respiration and Ca^{2+} waves linked during fertilisation and meiosis completion
Development **130**:683-692

DUMOLLARD, R., MARANGOS, P., FITZHARRIS, G., SWANN, K., DUCHEN, M., CARROLL, J. (2004)

Sperm-triggered (Ca^{2+}) oscillations and Ca^{2+} homeostasis in the mouse egg have an absolute requirement for mitochondrial ATP production
Development **131**:3057-3067

DURANTHON, V., RENARD, J.P. (2001)

The developmental competence of mammalian oocytes: a convenient but biologically fuzzy concept
Theriogenology **55**(6):1277-89

EARNSHAW, W.C. et al. (1999)

Mammalian caspases: structure, activation, substrates and functions during apoptosis
Annu. Rev. Biochem. **68**:383-424

EDWARDS, R.G. (1965)

Maturation in vitro of mouse, sheep, cow, pig, rhesus monkey and human ovarian oocytes
Nature **208**:349-51

EICHENLAUB-RITTER, U., VOGT, E., YIN, H., GOSDEN, R. (2004)

Spindles, mitochondria and redox potential in ageing oocytes
Reprod. BioMed. Online **8**:45-58

EL SHOURBAGY, S.H., SPIKINGS, E.C., FREITAS, M., ST JOHN, J.C. (2006)

Mitochondria directly influence fertilization outcome in the pig
Reproduction **131**(2):233-45

ENRIGHT; B.P., LONERGAN, P., WARD, F.A., FAIR, T., BOLAND, M.P. (2000)

Effect of duration of maturation, duration of gamete co-incubation and sperm concentration on cleavage and blastocyst development from cattle oocytes
Theriogenology **53**:419

- ENRIGHT; B.P., LONERGAN, P., DINNYES, A., FAIR, T., WARD, F.A., YANG, X., BOLAND, M.P. (2000b)**
Culture of in vitro produced bovine zygotes in vitro vs in vivo: implications for early embryo development and quality
Theriogenology **54**:659-673
- EPPIG, J.J. (1982)**
The relationship between cumulus cells-oocyte coupling, oocyte meiotic maturation, and cumulus expansion
Dev Biol **89**:268-272
- EPPIG, J.J. (1989)**
The participation of cyclic monophosphate (cAMP) in the regulation of meiotic maturation of oocytes in the laboratory mouse
J. Reprod. Fertil. Suppl **38**:3-8
- EPPIG J.J. (1991)**
Maintenance of meiotic arrest and the induction of oocyte maturation in mouse-granulosa cell-complexes developed in vitro from preantral follicles
Biol. Reprod. **45**:824-830
- EPPIG, J.J. (1991b)**
Intercommunication between mammalian oocytes and companion somatic cells
BioEssays **13**:569-574
- EPPIG, J.J. (1993)**
Regulation of mammalian oocyte maturation
in: Adashi, Leung; *The ovary*; Raven Press, Ltd., New York
- EPPIG, J.J. (1996)**
Coordination of nuclear and cytoplasmic oocyte maturation in eutherian mammals
Reprod. Fertil. Dev. **8**:485
- EPPIG, J.J. (2001)**
Oocyte control of ovarian follicular development and function in mammals
Reproduction **122**:829-838
- EPPIG, J.J., CHESNEL, F., HIRAO, Y. (1997)**
Oocyte control of granulosa cells development: how and why
Hum. Reprod. (12 Natl. Suppl. JBFS) **2**:127-32
- EPPIG, J.J., WIGGLESWORTH, K., PENDOLA, F.L. (2002)**
The mammalian oocyte orchestrates the rate of ovarian follicular development
Proc. Natl Acad Sci. USA **99**:2890-2894
- EROGLU, A., MEINECKE, B. (1990)**
Polypeptide synthesis in vivo and vitro matured porcine oocytes
Reprod. Dom. Anim. **25**:261-268
- EXLEY, G.E., TANG, C., MCELHINNY, A.S., WARNER, C.M. (1999)**
Expression of caspase and BCL-2 apoptotic family members in mouse preimplantation embryos
Biol. Reprod. **61**:231-9

FAIR, T., HYTTEL, P., GREVE, T. (1995)

An analytical model for ovarian follicle dynamics
J.Exp.Zool. **197**:173-185

FAIR, T., HYTTEL, P., GREVE, T. (1995b)

Bovine oocyte diameter in relation to maturational and transcriptional activity
Mol.Reprod.Dev. **42**:437-422

FAIR, T., HULSHOF, S.C., HYTTEL, P., GREVE, T., BOLAND, M. (1997)

Nucleus ultrastructure and transcriptional activity of bovine oocytes in preantral and early antral follicle
Mol.Reprod.Dev. **46**:208-15

FAN, H.Y., SUN, Q.Y. (2004)

Involvement of mitogen-activated protein kinase cascade during oocyte maturation and fertilization in mammals
Biol. Reprod. **70**:535-547

FISCHER, U., JÄNICKE, R.U., SCHULZE-OSTHOFF, K. (2003)

Many cuts to ruin: a comprehensive update of caspase substrates
Cell. Death Diff. **10**:76-100

FISSORE, R.A., HE, C.L., VANDE WOUDE, G.F. (1996)

Potential role of mitogen-activated protein kinase during meiosis resumption in bovine oocytes
Biol. Reprod. **55**(6):1261-70

FORTUNE, J.E. (1994)

Ovarian follicular growth and development in mammals
Biol. Reprod. **50**:225

FRY, R.C., NIALL, E.M., SIMPSON, T.L., SQUIRES, T.J., REYNOLDS, J. (1997)

The collection of oocytes from bovine ovaries
Theriogenology **47**:977-987

FUJINO, Y., OZAKI, K., YAMANASU, S., ITO, F., MATSUOKA, I., HAYASHI, E., NAKAMURA, H., OGITA, S., SATO, E., INOUE, M. (1996)

DNA fragmentation of oocytes in aged mice
Hum.Reprod. **11**:1480-3

FUKUI, Y. (1990)

Effect of follicle cells on the acrosome reaction, fertilization and developmental competence of bovine oocytes matured in vitro
Mol. Reprod. Dev. **26**:40-46

FULKA, H. (2004)

Distribution of mitochondria in reconstructed mouse oocytes
Reproduction **127**:195-200

FULKA JR, J., FIRST, N.L., MOOR, R.M. (1998)

Nuclear and cytoplasmic determinants involved in the regulation of mammalian oocyte maturation
Mol. Hum. Reprod. **4**(1):41-49

FUNAHASHI, H., DAY, B.N. (1993)

Effects of the duration of exposure to hormone supplements on cytoplasmic maturation of pig oocytes in vitro
J. Reprod. Fertil. **98**:179-85

GALEATI, G., MODINA, S., LAURIA, A., MATTIOLI, M. (1991)

Follicle somatic cells influence pig oocyte penetrability and corical granule distribution
Mol. Reprod. Dev. **29**:40-46

GANDOLFI, F., LUCIANO, A.M., MODINA, S., PONZINI, A., POCAR, P., ARMSTRONG, D.T., LAURIA, A. (1997)

The in vitro developmental competence of bovine oocytes can be related to the morphology of the ovary
Theriogenology **48**:1153-1160

GARDNER, R.L. (1996)

Can developmentally significant spatial patterning of the egg be discounted in mammals ?
Hum. Reprod. Update **2**:3-27

GAUTIER, J., MALLER, J.L., LANGAN, T.A., LOHKA, M.J., SHENOY, S., SHALLOWAY, D., NURSE, P. (1989)

Maturation-promoting factor and the regulation of the cell cycle
J. Cell. Sci. (Suppl) **12**:53-63

GAVIN, A.C., TSUKITANI, Y., SCHORDERET-SLATKINE, S. (1991)

Induction of M-phase entry of prophase-blocked mouse oocytes through microinjection of okadaic acid, a specific phosphatase inhibitor
Exp. Cell. Res. **192**:75-81

GILULA, N.B., EPSTEIN, M.L., BEERS, W.H. (1978)

Cell to cell communication and ovulation: A study of cumulus oocyte complex
J. Cell. Biol. **78**:58-75

GINTHER, OJ, KNOPF, L., KASTELIC, JP (1989)

Temporal association among ovarian events in cattle during oestrous cycles with two and three follicular waves
J. Reprod. Fertil. **87**:223-30

GONDOS, B., BHIRALEUS, P., HOBEL, C.J. (1971)

Ultrastructural observations on germ cells in human fetal ovaries
Am. J. Obstet. Gynecol. **110**:644-652

GORDON, I. (2003)

Laboratory Production of Cattle Embryos
2. Auflage
CABI Publishing

GOUGEON, A. (1996)

Regulation of ovarian follicular development in primates: facts and hypotheses
Endocr. Rev. **17**:121-55

GRANOT, I., DEKEL, N. (2002)

The ovarian gap junction protein connexin 43:regulation by gonadotropins
Trends in Endocrinology and Metabolism **13**:310-313

GRAZUL-BILSKA, A.T., REYNOLDS, L.P., REDMER, D.A. (1997)

Gap junctions in the ovaries
Biol. Reprod. **57**:947-957

GREEN, D.R., REED, J.C. (1998)

Mitochondria and apoptosis
Science **281**:1309-1312

GREVE, T., KING, W.A., BOUSQUET, D., BETTERIDGE, K.J. (1983)

Chromosomes of the bovine oocyte in vitro
J. Dairy Sci. **66**:245

GREVE, T., XU, K.P., CALLESEN, H., HYTTTEL, P. (1987)

In vivo development of in vitro fertilized bovine oocytes matured in vivo versus
in vitro
J. In Vitro Fert. Embryo Transfer **4**:281-284

**GRONDAHL, C., HYTTTEL, P., GRONDAHL, M.L., ERIKSEN, T., GOTFREDSEN, P.,
GREVE, T. (1995)**

Structural and endocrine aspects of equine oocyte maturation in vivo
Mol. Reprod. Dev. **42**:94-105

GROSS, A. et al. (1999)

Bcl-2 family members and the mitochondria in apoptosis
Genes Dev. **13**:1899-1911

GUIXUE, Z., LUCIANO, A.M., COENEN, K., GANDOLFI, F., SIRARD, M.A. (2001)

The influence of cAMP before or during bovine oocyte maturation on
embryonic developmental competence
Theriogenology **55**:1733-1743

GULBINS, E., DRESCHERS, S., BOCK, J. (2003)

Role of mitochondria in apoptosis
Exp. Physiol. **88**(Pt 1):85-90

HAEFLIGER, J.A., FORMENTON, A., CHANSON, A., SENN, A., SAHLI, R., SHAW, P.,

NICOD, P., GERMOND, M., VOZZI, C. (2001)

Connexin43 is involved in bovine oocyte meiotic maturation
Hum. Reprod. **16** (abstract book 1), 19

HAGEMANN, O.J., WEILERT, L.L., BEAUMONT, S.E., TERVIT, H.R. (1998)

Development of bovine embryos in single in vitro production (sIVP) systems
Mol. Reprod. Dev. **51**, 143-147

HAGEMANN, L.J. (1999)

Influence of the dominant follicle on oocytes from subordinate follicles
Theriogenology **51**:449-59

- HAGEMANN LJ, BEAUMONT SE, BERG M, DONNISON MJ, LEDGARD A, PETERSON AJ, (1999)**
Development during sIVP of bovine oocytes from dissected follicles: interactive effects of estrous cycle stage, follicle size and atresia
Mol. Reprod. Dev. **53**:451-8
- HAGEMANN, L.J., BEAUMONT, S.E., BERG, M., DONNISON, M.J., LEDGARD, A., PETERSON, A.J., SCHURMANN, A., TERVIT, H.R. (1999b)**
Development during single IVP of bovine oocytes from dissected follicles: interactive effects of estrous cycle stage, follicle size and atresia
Mol. Reprod. Dev. **53**:451-458
- HAMANO, S., KUWAYAMA, M. (1993)**
In vitro fertilization and development of bovine oocytes recovered from the ovaries of individual donors: A comparison between the cutting and aspiration method
Theriogenology **39**:703-712
- HANENBERG, E.H.A.T., VAN WAGTENDONK-DE LEEUW, A.M. (1997)**
Comparison of 3, 4 or 7 day interval between oocyte collections for in vitro embryo production results
Theriogenology **47**:158
- HANSEN; P.J., BLOCK, J. (2004)**
Towards an embryocentric world: the current and potential uses of embryo technologies in dairy production
Reprod. Fertil. Dev. **16**:1-14
- HASHIMOTO, S., TAKAKURA, R., KISHI, M., SUDO, T., MINAMI, N., YAMADA, M. (1999)**
Ultrasound-guided follicle aspiration:the collection of bovine cumulus-oocyte complexes from ovaries of slaughtered or live cows
Theriogenology **51**:757-765
- HASHIMOTO, S., MINAMI, N., TAKAKURA, R., IMAI, H. (2002)**
Bovine immature oocytes acquire developmental competence during meiotic arrest in vitro
Biol. Reprod. **66**:1696-1701
- HASSAN, H.A. (2001)**
Cumulus cell contribution to cytoplasmic maturation and oocyte developmental competence in vitro
J. Assist. Reprod. Genet. **18**(10):539-43
- HAWK, H.W., WALL, R.J. (1994)**
Improved yields of bovine blastocysts from in vitro-produced oocytes.
I. Selection of oocytes and zygotes
Theriogenology **41**:1571-1583
- HAZELEGER, N.L., STUBBINGS, R.B. (1992)**
Developmental potential of selected bovine oocyte cumulus complexes
Theriogenology **37**(1):219

HAZELEGER, N.L., HILL, D.J., STUBBINGS, R.B., WALTON, J.S. (1995)

Relationship of morphology and follicular fluid environment of bovine oocytes to their developmental potential in vitro
Theriogenology **43**:509-522

HEGELE-HARTUNG, C., KUHNKE, J., LESSL, M., GRONDAHL, C., OTTESEN, J., BEIER, H.M., EISNER, S., EICHENLAUB-RITTER, U. (1999)

Nuclear und cytoplasmic maturation of mouse oocytes after treatment with synthetic Meiosis-activating sterol in vitro
Biol. Reprod. **61**:1362-1372

HELEIL, B. (1999)

Untersuchung zur meiotischen Endreifung von bovinen Cumulus-Oozyten-Komplexen in Abhängigkeit von der Follikelgröße
Veterinärmedizinische Fakultät der Universität Leipzig, Dissertation

HENDRIKSEN, P.J.M., VOS, P.L.A.M., STEENWEG, W.N.M., BEVERS, M.M., DIELEMAN, S.J. (2000)

Bovine follicular development and its effect on the in vitro competence of oocytes
Theriogenology **53**:11-20

HENDRIKSEN, P.J.M., STEENWEG, W.N.M., HARKEMA, J.C., MERTON, J.S., BEVERS, M.M., VOS, P.L.A.M., DIELEMAN, S.J. (2004)

Effect of different stages of the follicular wave on in vitro developmental competence of bovine oocytes
Theriogenology **61**:909-920

HEYMANN, H. (1997)

Experimentelle Untersuchungen zur Bedeutung von Platelet-derived growth factor (PDGF) in der frühen Embryonalentwicklung von Rinderembryonen in einem definierten In-vitro-Produktionssystem
Hannover, Tierärztl. Hochsch., Diss.

HINRICHES, K. (1997)

Cumulus expansion, chromatin configuration and meiotic competence in horse oocytes: a new hypothesis
Equine Vet. J. Suppl.:43-6

HINRICHES, K., DIGIORGIO, L.M. (1991)

Embryonic development after intrafollicular transfer of horse oocytes
J. Reprod. Fertil. Suppl. **44**:369-374

HINRICHES, K., WILLIAMS, K.A. (1997)

Relationships among oocyte-cumulus morphology, follicular atresia, initial chromatin configuration, and oocyte meiotic competence in the horse
Biol. Reprod. **57**:377-84

HIRSHFIELD, A.N. (1991)

Development of follicles in mammalian ovary
Int. Rev. Cytol. **124**:43-101

HÖFFELER, F. (2003)

Bildatlas Zytologie
Verlag Harri Deutsch, Frankfurt/Main

- HOST, E., MIKKELSEN, A.L., LINDENBERG, S., SMIDT-JENSEN, S. (2000)**
Apoptosis in human cumulus cells in relation to maturation stage and cleavage of the corresponding oocyte
Acta Obstet. Gynecol. Scand. **79**:936-940
- HOST, E., GABRIELSEN, A., LINDENBERG, S., SMIDT JENSEN, S. (2002)**
Apoptosis in human cumulus cells in relation to zona pellucida thickness variation, maturation stage, and cleavage of the corresponding oocyte after intracytoplasmic sperm injection
Fertil. Steril. **77**:511-515
- HOWELL, N., CHINNERY, P., GOSH, S.S., FAHY, E., TURNBULL, D.M. (2000)**
Transmission of the human mitochondrial genome
Hum. Reprod. **15** (Suppl 2):235-245
- HSIEH, R., TSAI, N., AU, H., CHANG, S., CHENG, Y., TZENG, C. (2001)**
Multiple rearrangements of mitochondrial DNA and defective oxidative phosphorylation gene expression in unfertilized human oocytes
Fertil. Steril. **76**(3s):8(O-21)
- HUNTER, R.H.F. (1980)**
Techniques for in vitro maturation of gametes, in vitro fertilization, embryo culture and long-term storage
in: Phys Tech of Reprod Fem Dom Anim
Academic Press, 227-30
- HUNTER, A.G., MOOR, R.M. (1987)**
Stage-dependent effects of inhibiting ribonucleic acids and protein synthesis on meiotic maturation of bovine oocytes in vitro
J. Dairy Sci. **70**:1646-52
- HYTTEL, P. (1987)**
Bovine cumulus-oocyte disconnection in vitro
Anat. Embryol. **176**:41-44
- HYTTEL, P., XU, K.P., SMITH, S., GREVE, T. (1986)**
Ultrastructure of in-vitro oocyte maturation in cattle
J. Reprod. Fertil. **78**:615-625
- HYTTEL, P., CALLESEN, H., GREVE, T. (1986b)**
Ultrstructural features of preovulatory oocyte maturation in superovulated cattle
J. Reprod. Fertil. **76**:645-656
- HYTTEL, P., XU, K.P., SMITH, S., CALLESEN, H., GREVE, T. (1987)**
Ultrastructure of final nuclear maturation of bovine oocytes in vitro
Anat. Embryol. **176**:35-45
- HYTTEL, P., GREVE, T., CALLESEN, H. (1989)**
Ultrastructural aspects of oocyte maturation and fertilization in cattle
J. Reprod. Fertil. **38** (Suppl.):35-47
- HYTTEL, P., NIEMANN, H. (1990)**
Ultrastructure of porcine embryos following development in vitro versus in vivo
Mol. Reprod. Dev. **27**:136-144

- HYTTEL, P., FAIR, T., CALLESEN, H., GREVE, T. (1997)**
Oocyte growth, capacitation and final maturation in cattle
Theriogenology **47**:23-32
- HYTTEL, P., FAIR, T., CALLESEN, H., GREVE, T. (1999)**
Transcriptional activity and ultrastructure in bovine oocytes
Reprod. Dom. Anim. **34**:447-454
- IKEDA, S., IMAI, H., YAMADA, M. (2003)**
Apoptosis in cumulus cells during in vitro maturation of bovine cumulus-enclosed oocytes
Reproduction **125**:369-376
- INOUE, M., NAITO, K., AOKI, F., TOYODA, Y., SATO, E. (1995)**
Activation of mitogen-activated protein kinase during meiotic maturation in porcine oocytes
Zygote **3**:265-271
- INOUE, M., NAITO, K., NAKAYAMA, T., SATO, R. (1996)**
Mitogen-activated protein kinase activity and microtubule organization are altered by protein synthesis inhibition in maturing porcine oocytes
Zygote **4**:191-198
- IRITANI, A., NIWA, K. (1977)**
Capacitation of bull spermatozoa and fertilization in vitro of cattle follicular oocytes matured in culture
J. Reprod. Fertil. **50**:119-121
- IWAMATSU, T., YANAGIMACHI, R. (1975)**
Maturation in vitro of ovarian oocytes of prepuberal and adult hamsters
J. Reprod. Fertil. **45**:83-90
- IZADYAR, F., ZEINSTRA, E., BEVERS, M.M. (1998)**
Follicle-stimulating hormone and growth hormone act differently on nuclear maturation while both enhance developmental competence of in vitro matured bovine oocytes
Mol. Reprod. Dev. **51**:339-45
- JANSEN, R. (2000)**
Germline passage of mitochondria: quantitative considerations and possible embryological sequelae
Hum. Reprod. **15** (Suppl 2):112-128
- JANSEN, R.P.S., DE BOER, K. (1998)**
The bottleneck: mitochondrial imperatives in oogenesis and ovarian follicular fate
Mol. Cell. Endocrinol. **145**:81-88
- JOHNSON, M.L., REDMER, D.A., REYNOLDS, L.P., GRAZUL-BILSKA, A.T. (1999)**
Expression of gap junctional proteins connexin 43, 32 and 26 throughout follicular development and atresia in cows
Endocrine **10**:43-51

- JOHNSON, A.E., BORMANN, C.L., KNEE, A.M., SWAIN, J.E., GIBBONS, J.R., KRISHER, R.L. (2001)**
Developmental competence of bovine oocytes retrieved from 5 and 10 mm follicles of a new follicular wave
Theriogenology **55**:405
- JOHNSON, J., CANNING, J., KANEKO, T., PRU, J.K., TILLY, J.L. (2004)**
Germline stem cells and follicular renewal in the postnatal mammalian ovary
Nature **428**:145-150
- JOLLY, P.D., TISDALL, D.J., HEATH, D.A., LUN, S., MCNATTY, K.P. (1994)**
Apoptosis in bovine granulosa cells in relation to steroid synthesis, cyclic adenosine 3',5'-monophosphate response to follicle-stimulating hormone and luteinizing hormone, and follicle atresia
Biol Reprod **51**, 934-944
- JOZA, N., SUSIN, S.A., GAUGAS, E., STANFORD, W.L., CHO, S.K., LI, C.Y.J., SASAKI, T., ELIA, A.J., CHENG, H.-Y.M., RAVAGNAN, L., FERRI, K.F., ZAMZAMI, N., WAKEHAM, A., HAKEM, R., YOSHIDA, H., KONG, Y.-Y., ZUNIGA-PFLÜCKER, J.C., KROEMER, G., PENNINGER, J.M. (2001)**
Essential role of the mitochondrial apoptosis inducing factor in programmed cell death
Nature **410**:549-554
- KANITZ, W. (2003)**
Follicular dynamic and ovulation in cattle – a review
Archives of Animal Breeding **46**(2):187-198
- KANITZ, W., BRÜSSOW, K.-P., BECKER, F., TORNER, H., SCHNEIDER, F., KUBELKA, M., TOMEK, W. (2001)**
Comparative aspects of follicular development, follicular and oocyte maturation and ovulation in cattle and pigs
Archives of Animal Breeding **44**:9-23
- KASTELIC, J.P. (1994)**
Understanding ovarian follicular development in cattle
Vet.Med. **89**:64-71
- KATSKA, L., KAUFFOLD, P., SMORAG, Z., DUSCHINSKI, V., TORNER, H., KANITZ, W. (1989)**
Influence of hardening of the zona pellucida on in vitro fertilization of bovine oocytes
Theriogenology **32**:767-77
- KAUFFOLD, P., THAMM, I.(1985)**
Zustandsbeurteilung von Rinderembryonen
Forschungszentrum für Tierproduktion Dummerstorf-Rostock der Akademie der Landwirtschaftswissenschaften der DDR Berlin
- KEEFER, C.L., STICE, S.L., DOBRINSKY, J. (1993)**
Effect of follicle-stimulating hormone and luteinizing hormone during bovine in vitro maturation on development following in vitro fertilization and nuclear transfer
Mol. Reprod. Dev. **36**:469-474

KERR, J.F.R., WYLLIE, A.H., CURRIE, A.R. (1972)

Apoptosis: A basic biological phenomenon with wideranging implications in tissue kinetics
Br. J. Cancer **26**:239-57

KIM, N.H., CHO, S.K., CHOI, S.H., KIM, E.Y., PARK, S.P., LIM, J.H. (2000)

The distribution and requirements of microtubules and microfilaments in bovine oocytes during in vitro maturation
Zygote **8**:25-32

KING, W.A., BOUSQUET, D., GREVE, T., GOFF, A.K. (1986)

Meiosis in bovine oocytes matured in vitro and in vivo
Acta Vet. Scand. **27**:267-79

KLEINIG, H., SITTE, P. (1999)

Zellbiologie
4. Auflage
Verlag Gustav Fischer, Stuttgart; Jena; Lübeck; Ulm

KÖLLE, S., STOJKOVIC, M., BOIE, G., WOLF, E., SINOWATZ, F. (2003)

Growth hormone-related effects on apoptosis, mitosis, and expression of connexin 43 in bovine in vitro maturation cumulus-oocyte complexes
Biol. Reprod. **68**:1584-1589

KOENIG, U., ECKHART, L., TSCHACHLER, E. (2001)

Evidence that caspase-13 is not a human but a bovine gene
Biochem. Biophys. Res. Communication **285**:1150-4

KONO, T., OBATA, Y., YOSHIMIZU, T. (1996)

Epigenetic modifications during oocyte growth correlates with extended parthenogenetic development in the mouse
Nature Genet. **13**:91-94

KOTHAKOTA, S., AZUMA, T., REINHARD, C., KLIPPEL, A., TANG, J., CHU, K., MCGARRY, T.J., KIRSCHNER, M.W., KOTHS, K., KWIATKOWSKI, D.J., WILLIAMS, L.T. (1997)

Caspase-3-generated fragment of gelsolin: effector of morphological change in apoptosis
Science **278**(5336):294-8

KRÄUSLICH, H., PALMA, G., BREM, G. (1997)

Techniques of bovine embryo production and their possible consequences for breeding strategies and the future role of practitioners in embryo transfer
in: 13. Kongr. d. European Embryo Transfer Association (A.E.T.E.), Lyon 1997,
Kongressbericht S. 115-122

KREUZIG, T. (1993)

Biochemie
7. Auflage
Jungjohann Verlag mbH, Neckarsulm; Stuttgart

KRISCHEK, C., MEINECKE, B. (2002)

In vitro maturation of bovine oocytes requires polyadenylation of mRNAs coding proteins for chromatin condensation , spindle assembly, MPF and MAP kinase activation
Anim. Reprod. Sci. **73**:129-140

KRISHER, R.L., BAVISTER, B.D. (1997)

Correlation of mitochondrial organization with developmental competence in bovine oocytes matured in vitro
Biol. Reprod. **56**:602

KRUIP, T.A.M., CRAN, D.G., VAN BENEDEN, T.H., DIELEMAN, S.J. (1983)

Structural changes in bovine oocytes during final maturation in vivo
Gamete Res. **8**:29-47

KUBELKA, M., MOTLIK, J., SCHULTZ, R.M., PAVLOK, A. (2000)

Butyrolactone I reversibly inhibits meiotic maturation of bovine oocytes, without influencing chromosome condensation activity
Biol. Reprod. **62**:292-302

LAEMMLI, U.K. (1970)

Cleavage of structural proteins during the assembly of the head of bacteriophage T4
Nature **227**:680-685

LAURINCIK, J., HYTTTEL, P., BARAN, V., SCHMOLL, F., NIEMANN, H., BREM, G., SCHELLANDER, K. (1996)

Corona radiata density as a non-invasive marker of bovine cumulus-corona-oocyte complexes selected for in vitro embryo production
Theriogenology **46**:369-377

LARSEN, W.J., WERT, S.E., BRUNNER, G.D. (1987)

Differential modulation of rat follicle cell gap junction populations at ovulation
Dev. Biol. **122**:61-71

LARSEN, W.J., CHEN, L., POWERS, R., ZHANG, H., RUSSELL, P.T., CHAMBERS, C., HESS, K., FLICK, R. (1996)

Cumulus expansion initiates physical and developmental autonomy of the oocyte
Zygote **4**:335-341

LEE, K.S., JOO, B.S., NA, Y.J., YOON, M.S., CHOI, O.H., KIM, W.W. (2001)

Cumulus cells apoptosis as an indicator to predict the quality of oocytes and the outcome of IVF-ET
Assist. Reprod. Genet. **18**:490-498

LEFEVRE, B., GOUGEON, A., TESTART, J. (1987)

In-vitro maturation: some questions concerning the initiation and prevention of this process in humans
Hum. Reprod. **2**:495-497

LEHNINGER, A.L., NELSON, D.L., COX, M.M. (1994)

Prinzipien der Biochemie
2. Auflage
Spektrum Verlag, Heidelberg; Oxford

LEIBFRIED, L., FIRST, N.L. (1979)

Characterization of bovine follicular oocytes and their ability to mature in vitro
J. Anim. Sci. **48**:76-86

LEIBFRIED-RUTLEDGE, M.L., CRITSER, E.S., EYESTONE, W.H., NORTHEY, D.L., FIRST, N.L. (1987)

Development potential of bovine oocytes matured in vitro or in vivo
Biol. Reprod. **36**(2):376-83

LENHART, J.A., DOWNEY, B.R., BAGNELL, C.A. (1998)

Connexin 43 gap junction protein expression during follicular development in the porcine ovary
Biol. Reprod. **58**:583-590

LI, P., NIJHAWAN, D., BUDIHARDJO, I., SRINIVASULA, S.M., AHMAD, M., ALNEMRI, E.S., WANG, X. (1997)

Cytochrome c and dATP-dependent formation of APAF-1/caspase-9 complex initiates an apoptotic protease cascade
Cell **91**(4):479-89

LI, R., NORMAN, R.J., ARMSTRONG, D.T., GILCHRIST, R.B. (2000)

Oocyte-secreted factor(s) determine functional differences between bovine mural granulosa cells and cumulus cells
Biol. Reprod. **63**:839-845

LIN, D.P.C., HUANG, C.C., WU, H.M., CHENG, T.C., CHEN, C.I., LEE, M.S. (2004)

Comparison of mitochondrial DNA contents in human embryos with good or poor morphology at the 8-cell stage
Fertil. Steril. **81**:73-79

LIU, L., HAMMAR, K., SMITH, P.J., INOUE, S., KEEFE, D.L. (2001)

Mitochondrial modulation of calcium signaling at the initiation of development
Cell. Calcium. **30**:423-433

LÖFFLER, G. (1999)

Basiswissen Biochemie
2. Auflage
Springer Verlag, Berlin

LONERGAN, P., MONAGHAN, P., RIZOS, D., BOLAND, M.P., GORDON, I. (1994)

Effect of follicle size on bovine oocyte quality and developmental competence following maturation, fertilization and culture in vitro
Mol. Reprod. Dev. **37**:48-53

LONERGAN, P., DINNYES, A., FAIR, T., YANG, X., BOLAND, M. (2000)

Bovine oocyte and embryo development following meiotic inhibition with butyrolactone I
Mol. Reprod. Dev. **57**:204-209

LONERGAN, P., RIZOS, D., GUTIERREZ-ADAN, A., FAIR, T., BOLAND, M. (2003)

Oocyte and embryo quality: effect of origin, culture conditions and gene expression patterns
Reprod. Domest. Anim. **38**:259-267

LUDWIG, T.E., SQUIRRELL, J.M., PALMENBER, A.C., BAVISTER, B.D. (2001)

Relationship between development, metabolism, and mitochondrial organization in 2-cell hamster embryos in the presence of low levels of phosphate

Biol. Reprod. **65**:1648-1654

LUOH, Y., WU, M. (1996)

Mitochondrial distribution of swine ova and embryos analyzed by rhodamine 123 fluorescent assay

J. Chin. Soc. Anim. Sci. **25**:53-66

MADISON, V., AVERY, B., GREVE, T. (1992)

Selection of immature bovine oocytes for development potential in vitro

Anim. Reprod. Sci. **27**:1-11

MACHATKOVA, M., JOKESOVA, E., HORKY, F., KREPELOVA, A. (2000)

Utilization of the growth phase of the first follicular wave for bovine oocyte collection improves blastocyst production

Theriogenology **54**:543-50

MACHATKOVA, M., KRAUSOVA, K., JOKESOVA, E., TOMANEK, M. (2004)

Developmental competence of bovine oocytes: effects of follicle size and the phase of follicular wave on in vitro embryo production

Theriogenology **61**:329-335

MALENKO, G.P. (1999)

Device to recover bovine cumulus-oocyte complexes (COCs) without destroying their cumulus layers from antral ovarian follicles

in: Proceedings 15th Meeting European Embryo Transfer Association, Lyon, S. 198

MANCINI, M., NICHOLSON, D.W., ROY, S., THORNBERRY, N.A., PETERSON, E.P., CASIOLA-ROSEN, L.A., ROSEN, A. (1998)

The caspase-3 precursor has a cytosolic and mitochondrial distribution: implications for apoptotic signaling

J. Cell. Biol. **140**(6):1485-95

MANABE, N., IMAI, Y., OHNO, H., TAKAHAGI, Y., SUGIMOTO, M., MIYAMOTO, H. (1996)

Apoptosis occurs in granulosa cells but not cumulus cells in the atretic antral follicles in pig ovaries

Experientia **52**:647-651

MANTOVANI, R., ROTA, A., PENZO, N., BITTANTE, G. (1999)

Comparison among oocytes recovery methods for bovine embryo production in vitro

in: Piva, G., Bertoni, G., Masoero, F., Bani, P., Calamari, L.

Proceedings ASPA 13th Congress, S. 235-237

MARGINEANTU, D.H., COX, W.G., SUNDELL, L., SHERWOOD, S:W., BEECHAM, J.M., CAPALDI, R.A. (2002)

Cell cycle dependent morphology changes and associated redistribution in mitochondria of human cell lines

Mitochondrion **1**:425-435

MARQUES, C.C., PEREIRA, R.M., VASQUES, M.I., BAPTISTA, M.C., HORTA, A.E.M. (1997)

Effect of refrigeration of donor ovaries on the in vitro production of bovine embryos and granulosa cell culture
in: I Congresso Iberico Reproducao Animal, Estoril, Vol. 2, S. 136-141

MATTIOLI, M., LUCIDI, P., BARBONI, B. (1998)

Expanded cumuli induce acrosome reaction in boar sperm
Mol. Reprod. Dev. **51**:445-453

MATTSON, B.A., ALBERTINI, D.F. (1990)

Oogenesis: chromatin and microtubule dynamics during meiotic prophase
Mol. Reprod. Dev. **25**:374-383

MATZUK, M.M., BURNS, K.H., VIVEIROS, M.M., EPPIG, J.J. (2002)

Intercellular communications in the mammalian ovary: oocytes carry the conversation
Science **296**:2178-2180

MAYES, M.A., SIRARD, M.A. (2001)

The influence of cumulus-oocyte complex morphology and meiotic inhibitors on the kinetics of nuclear maturation in cattle
Theriogenology **55**:911-922

MEMILI, E., FIRST, N.L. (1999)

Control of gene expression at the onset of bovine embryonic development
Biol. Reprod. **61**:1198-1207

MERMILLOD, P., OUSSAID, B., COGNIE, Y. (1999)

Aspects of follicular and oocyte maturation that affect the developmental potential of embryos
J. Reprod. Fertil. Suppl. **54**:449-60

MERMILLOD, P., TOMANEK, M., MARCHAL, R., MEIJER, L. (2000)

High developmental competence of cattle oocytes maintained at the germinal vesicle stage for 24 hours in culture by specific inhibition of MPF kinase activity
Mol. Reprod. Dev. **55**:89-95

METZSTEIN, M.M. et al. (1998)

Genetics of programmed cell death in *C. elegans*: past, present and future
Trends Genet. **14**:410-416

MIKKELSEN, A.L., HOST, E., LINDBERG, S. (2001)

Incidence of apoptosis in granulosa cells from immature human follicles
Reproduction **122**:481-486

MILLER, G.F., RORIE, R.W. (2000)

Effect of oxygen concentration during oocyte maturation on subsequent bovine embryo cleavage and development in vitro
in: Research Series Nr. **478**
Arkansas Agricultural Experiment Station, 43-44

MOFFATT, O., DRURY, S., TOMLINSON, M., AFNAN, M., SAKKAS, D. (2002)

The apoptotic profile of human cumulus cells changes with patient age and after exposure to sperm but not in relation to oocyte maturity
Fertil. Steril. **77**(5):1006-11

MONAGHAN, P., CAROLAN, C., LONERGAN, P., SHARIF, H., WAHID, H., GORDON, I. (1993)

The effect of maturation time on the subsequent in vitro development of bovine oocytes
Theriogenology **39**:270

MOOR, R.M., SMITH, M.W., DAWSON, R.C.M. (1980)

Measurement of intercellular coupling between oocytes and cumulus cells using intracellular markers
Exp. Cell Res. **126**:15-29

MOOR, R.M., OSBORN, J.C., CRAN, D.G., WALTERS, D.E. (1981)

Selective effect of gonadotropins on cell coupling, nuclear maturation and protein synthesis in mammalian oocytes
J. Embryol. Exp. Morph. **61**:347-365

MOOR, R.M., CROSBY, I.M. (1986)

Protein requirement for germinal vesicle breakdown in ovine oocytes
J. Embryol. Exp. Morphol. **94**:207-20

MORI, T., AMANO, T., SHIMIZU, H. (2000)

Roles of gap junctional communication of cumulus cells in cytoplasmic maturation of porcine oocytes cultured in vitro
Biol Reprod **62**:913-919

MORI, M., OTOI, T., SUZUKI, T. (2002)

Correlation between the Cell Number and Diameter in bovine embryos produced in vitro
Reprod. Dom. Anim. **37**:181-184

MOSIMANN, W., KOHLER, T. (1990)

Zytologie, Histologie und mikroskopische Anatomie der Haussäugetiere
Verlag Paul Parey Berlin, Hamburg

MOTLIK, J., FULKA, J. (1976)

Breakdown of the germinal vesicle in pig oocytes in vivo and in vitro
J. Exp. Zool. **198**:155-162

MOTLIK, J.A., KOEFOED-JOHNSEN, H.H., FULKA, J. (1978)

Breakdown of germinal vesicle in bovine oocytes cultivated in vitro
J. Exp. Zool. **205**:377-384

MOTLIK, J., FULKA, J. (1986)

Factors affecting meiotic competence in pig oocytes
Theriogenology **25**:87-96

MOTLIK, J., FULKA JR, J., PROCHANKA, R., RIMKEVICOVA, Z., KUBLEKA, M., FULKA, J. (1989)

RNA and protein synthesis requirements for the resumption of meiosis in rabbit oocytes: The role of cumulus cells
Reprod. Nutr. Dev. **29**:601-609

MOTLIK, J., RIMKEVICOVA, Z. (1990)

Combined effects of protein synthesis and phosphorylation inhibitors on maturation of mouse oocytes in vitro
Mol. Reprod. Dev. **27**:230-234

MOTLIK, J., KUBELKA, M. (1990b)

Cell-cycle aspects of growth and maturation of mammalian oocytes
Mol. Reprod. Dev. **27**:366-375

MOTTA, P.M., MAKABE, S., NAGURO, T. (1994)

Oocyte-follicle cells association during development of human ovarian follicle: a study by high resolution scanning and transmission electron microscopy
Arch Histol Cytol **57**:369-94

MOTTA, P.M., NOTTOLA, S.A., MAKABE, S. (1997)

Natural history of the female germ from 1st origin to full maturation through prenatal ovarian development
European Journal of Obstetrics and Gynaecological Reproduction **75**:5-10

MOTTA, P.M., NOTTOLA, S.A., MAKABE, S., HEYN, R. (2000)

Mitochondrial morphology in human fetal and adult female germ cells
Hum. Reprod. **15**(Suppl 2):129-47

MUGGLETON-HARRIS, A.L., BROWN, J.J. (1988)

Cytoplasmic factors influence mitochondrial reorganization and resumption of cleavage during culture of early mouse embryos
Hum. Reprod. **3**:1020-1028

NAKAHARA, K., SAITO, H., SAITO, T. (1997)

Incidience of apoptotic bodies in membrana granulosa of patients participating in an in vitro fertilization program
Fertil. Steril. **67**:302-308

NISHI, Y., TAKESHITA, T., SATO, K., ARAKI, T. (2003)

Change of the mitochondrial distribution in mouse ooplasm during in vitro maturation
J. Nippon Med. Sch. **70**(5):408-15

NOTO, V., CAMPO, R., ROZIERS, P., SWINNEN, K., VERCRUYSEN, M., GORDTS, S. (1993)

Mitochondrial distribution after fast embryo freezing
Hum Reprod **8**:2115-2118

NURSE, P. (1990)

Universal control mechanism regulating onset of M-phase
Nature **344**:503-508

- NUTTINCK, F., PEYNOT, N., HUMBLOT, P., MASSIP, A., DESSY, F., FLECHON, J.E. (2000)**
Comparative immunohistochemical distribution of connexin 37 and connexin 43 throughout folliculogenesis in the bovine ovary
Mol. Reprod. Dev. **57**:60-66
- O'BRIEN, J.K., DWARTE, D., RYAN, J.P., MAXWELL, W.M.C., EVANS, G. (1996)**
Developmental capacity, energy metabolism and ultrastructure of mature oocytes from prepubertal and adult sheep
Reprod. Fertil. Dev. **8**:1029-37
- OCANA-QUERO, J.M., MORENO-MILLAN, M., VALERA-CORDOBA, M., FRANGANILLO, A. (1994)**
The influence of different types of media supplement on the meiotic maturation of bovine oocytes in vitro
Theriogenology **41**:405-411
- OCANA-QUERO, J.M., PINEDO-MERLIN, M., MORENO-MILLAN, M. (1999)**
Influence of follicle size, medium, temperature and time on the incidence of diploid bovine oocytes matured in vitro
Theriogenology **51**:667-672
- OKTAY, K., SCHENKEN, R.S., NELSON, J.F. (1995)**
Proliferating cell nuclear antigen marks the initiation of follicular growth in the rat
Biol. Reprod. **53**:295-301
- OOSTERHUIS, G.J.E., MICHGELSEN, H.W., LAMBALK, C.B., SCHOEMAKER, J., VERMES, I. (1998)**
Apoptotic cell death in human granulosa-lutein cells: a possible indicator of in vitro fertilization outcome
Fertil. Steril. **70**:747-749
- OTOI, T., YAMAMOTO, K., KOYAMA, N., TACHIKAWA, S., SUZUKI, T. (1997)**
Bovine oocyte diameter in relation to developmental competence
Theriogenology **48**:769-774
- PANT, D., REYNOLDS, L.P., LUTHER, J.S., BOROWICZ, P.P., STENBAK, T.M., BILSKI, J.J., WEIGL, R.M., LOPES, F., PETRY, K., JOHNSON, M.L., REDMER, D.A., GRAZUL-BILSKA, A.T. (2005)**
Expression of connexion 43 and gap junctional intercellular communication in the cumulus-oocyte complex in sheep
Reproduction **129**:191-200
- PAPANDILE, A., TYAS, D., O'MALLEY, D.M., WARNER, C.M. (2004)**
Analysis of caspase-3, caspase-8 and caspase-9 enzymatic activities in mouse oocytes and zygotes
Zygote **12**:57-64
- PARK, C.K., OGHODA, O., NIWA, K. (1989)**
Penetration of bovine follicular oocytes by frozen-thawed spermatozoa in the presence of caffeine and heparin
J. Reprod. Fertil. **86**:577-582

- PARRISH, J.J., SUSKO-PARRISH, J.L., LEIBFRIED-RUTLEDGE, M.L., CRITSER, E.S., EYESTONE, W.H., FIRST, N.L. (1986)**
Bovine in vitro fertilization with frozen-thawed semen
Theriogenology **25**:591-600
- PAVLOK, A., LUCAS-HAHN, A., NIEMANN, H. (1992)**
Fertilization and developmental competence of bovine oocytes derived from different categories of antral follicles
Mol. Reprod. Dev. **31**:63-7
- PEARL, R., SCHOPPE, W.F. (1929)**
Studies on the physiology of reproduction in the domestic fowl
J. Exp. Zool. **34**:101-118
- PEREIRA, D.C., DODE, M.A.N., RUMPF, R. (2005)**
Evaluation of different culture systems on the in vitro production of bovine embryos
Theriogenology **63**:1131-1141
- PEREZ, G., TILLY, J. (1997)**
Cumulus cells are required for the increased apoptotic potential in oocytes of aged mice
Hum. Reprod. **12**:2781-2783
- PEREZ, G.I., KNUDSON, C.M., LEYKIN, L., KORSMEYER, S.J., TILLY, J.L. (1997)**
Apoptosis-associated signaling pathways are required for chemotherapy-mediated germ cell destruction
Nat. Med. **3**:1228-32
- PEREZ, G.I., TAO, X., TILLY, J.L. (1999)**
Fragmentation and death (aka apoptosis) of ovulated oocytes
Mol. Hum. Reprod. **5**:414-20
- PEREZ, G., TRBOVICH, A., GOSDEN, R., TILLY, J. (2000)**
Mitochondria and the death of oocytes
Nature **403**:500-501
- PICTON, H., BRIGGS, D., GOSDEN, R. (1998)**
The molecular basis of oocyte growth and development
Mol. Cell. Endocrinol. **145**:27-37
- PICTON, H.M. (2001)**
Activation of follicle development: the primordial follicle
Theriogenology **55**:1193-1210
- PINCUS, G., ENZMANN, E.V. (1935)**
The comparative behaviour of mammalian eggs in vivo and in vitro
J. Exp. Med. **62**:665-675
- PINYOPUMMINTR, T., BAVISTER, B.D. (1994)**
Effect of gaseous atmosphere on in vitro maturation and in vitro fertilization of bovine oocytes
Theriogenology **41**:276

PLATTNER, H., HENTSCHEL, J. (1997)

Taschenlehrbuch Zellbiologie
Georg Thieme Verlag, Stuttgart

PONDERATO, N., LAGUTINA, I., CROTTI, G., TURINI, P., GALLI, C., LAZZARI, G. (2001)

Bovine oocytes treated prior to in vitro maturation with a combination of butyrolacton I and roscovitine at low doses maintain a normal developmental capacity
Mol. Reprod. Dev. **60**:579-585

POWERS, R.D., PALEOS; G.A. (1982)

Combined effects of calcium and dibutyryl cyclic AMP on germinal vesicle breakdown in the mouse oocyte
J. Reprod. Fertil. **66**:1-8

POZO, J., CORRAL, E., PEREDA, J. (1990)

Subcellular structure of prenatal human ovary: mitochondrial distribution during meiotic prophase
Submicrosc. Cytol. Pathol. **22**:601-607

PROKOFIEV, M.I., ERNST, L.K., SURAeva, N.M., LAGUTINA, I.S., UDAVLENNIKOVA, N.N., KESYAN, A.Z., DOLGOHATSKIY, A.I. (1992)

Bovine oocyte maturation, fertilization and further development in vitro and after transfer into recipients
Theriogenology **38**:461-469

QUIRK, S.M., HARMAN, R.M., COWAN, R.G. (2000)

Regulation of Fas antigen (Fas, CD95)-mediated apoptosis of bovine granulosa cells by serum and growth factors
Biol Reprod **63**:1278-1284

RACOWSKY, C. (1986)

The releasing action of calcium upon cyclic AMP-dependent meiotic arrest in hamster oocytes
J. Exp. Zool. **239**:263-275

RACOWSKY, C., BALDWIN, K.V. (1989)

In vitro and in vivo studies reveal that hamster oocyte meiotic arrest is maintained only transiently by follicular fluid, but persistently by membrane/cumulus granulosa cell contact
Dev. Biol. **134**:297-306

RAFF, M.C. (1992)

Social controls on cell survival and cell death
Nature **356**:397-400

RAJAKOWSKI, E. (1960)

The ovarian follicular system in sexually mature heifers with special reference to seasonal, cyclical and left-right variation
Acta. Endocrin. **34** (Suppl.52):7-78

RAJIKIN, M.H., YUSOFF, M., ABDULLAH, R.B. (1994)

Ultrastructural studies of developing goat oocytes in vitro
Theriogenology **42**:1003-1016

RALPH, J.H., TELFER, E.E., WILMUT, I. (1995)

Bovine cumulus cell expansion does not depend on the presence of an oocyte secreted factor
Mol. Reprod. Dev. **42**(2):248-53

RAMAN, R.S., CHAN, P.J., CORSELLI, J.U., PATTON, W.C., JACOBSON, J.D., CHAN, S.R., KING, A. (2001)

Comet assay of cumulus cell DNA status and the relationship to oocyte fertilization via intracytoplasmic sperm injection
Hum. Reprod. **16**:831-835

RAVAGNAN, L., ROUMIER, T., KROEMER, G. (2002)

Mitochondria: the killer organelles and their weapons
J. Cell. Phys. **192**:131-137

REGULA, K.M., ENS, K., KIRSHENBAUM, L.A. (2003)

Mitochondria-assisted cell suicide: a license to kill
J. Mol. Cell. Cardiol. **35**:559-567

REYNIER, P., CHRETIEN, M.F., SAVAGNER, F. (1998)

Long PCR analysis of human gamete mtDNA suggests defective mitochondrial maintenance in spermatozoa and supports the bottleneck theory for oocytes
Biochem. Biophys. Res. Commun. **252**:373-377

RHO, G.J., KIM, S., YOO, J.G., BALASUBRAMANIAN, S., LEE, H.J., CHOE, S.Y. (2002)

Microtubulin configuration and mitochondrial distribution after ultr-rapid cooling of bovine oocytes
Mol. Reprod. Dev. **63**(4):464-70

RICHARD, F.J., SIRARD, M.A. (1996a)

Effects of follicular cells on oocyte maturation
I: Effects of follicular hemisections on bovine oocyte maturation in vitro
Biol. Reprod. **54**:16-21

RICHARD, F.J., SIRARD, M.A. (1996b)

Effects of follicular cells on oocyte maturation
II: Theca cell inhibition of bovine oocyte maturation in vitro
Biol. Reprod. **54**:22-8

RICHARD, F.J., TSAFRIRI, A., CONTI, M. (2001)

Role of phosphodiesterase type 3A in rat oocyte maturation
Biol. Reprod. **65**:1444-1451

RICHTER, J.D. (1999)

Cytoplasmic polyadenylation in development and beyond
Mol. Biol. Rev. **63**:446-456

RIZOS, D., WARD, F., DUFFY, P., BOLAND, M.P., LONERGAN, P. (2002)

Consequences of bovine oocyte maturation, fertilization or early embryo development in vitro versus in vivo: implications for blastocyst yield and blastocyst quality
Mol. Reprod. Dev. **61**:234-48

- ROBERT, C., GAGNE, D., BOUSQUET, D., BARNES, F.L., SIRARD, M.A. (2001)**
Differential display and suppressive subtractive hybridization used to identify granulosa cell messenger RNA associated with bovine oocyte developmental competence
Biol. Reprod. **64**:1812-1820
- RODRIGUEZ, K.F., PETTERS, R.M., CROSIER, A.E., FARIN, C.E. (2002)**
Roles of gene transcription and PKA subtype activation in maturation of murine oocytes
Reproduction **123**:799-806
- RODRIGUEZ, K.F., FARIN, C.E. (2004a)**
Developmental capacity of bovine cumulus oocyte complexes after transcriptional inhibition of germinal vesicle breakdown
Theriogenology **61**:1499-1511
- RODRIGUEZ, K.F., FARIN, C.E. (2004b)**
Gene transcription and regulation of oocyte maturation
Reproduction, Fertility and Development **16**:55-67
- RUBIO POMAR, F.J., ROELEN, B.A., SLOT, K.A., VAN TOL, H.T., COLENBRANDER, B., TEERDS, K.J. (2004)**
Role of Fas-mediated apoptosis and follicle-stimulating hormone on the developmental capacity of bovine cumulus oocyte complexes in vitro
Biol. Reprod. **71**(3):790-6
- RÜSSE, I., SINOWATZ, F. (1991)**
Lehrbuch der Embryologie der Haustiere
Verlag Paul Parey, Berlin, Hamburg
- SAEKI, K., NAGAO, Y., HOSHI, M., KAINUMA, H. (1994)**
Effects of cumulus cells on sperm penetration of bovine oocytes in protein-free medium
Theriogenology **42**:1115-1123
- SANTHANANTHAN, A.H. (1997)**
Ultrastructure of the human egg
Hum. Cell. **10**:21-38
- SANTHANANTHAN, A.H. (2003)**
Morphology and pathology of the human oocyte
in: *Biology and Pathology of the oocyte*; S. 185-207
Trounson, A.O., Gosden, R.G.
Cambridge University Press
- SANTHANANTHAN, A.H., TROUNSON, A.O. (1982)**
Ultrastructural observations on cortical granules in human follicular oocytes cultured in vitro
Gamete Res **5**:191-8
- SANTHANANTHAN, A.H., TROUNSON, A., SOON-CHYE, N.G. (1991)**
Maturation of human oocyte
in: Familiari, G.S., Makabe, S., Motta, P.M.: *Ultrastructure of the ovary*
Kluwer Academic Publishers, Boston 2, S. 29-38

SANTHANANTHAN, A.H., TROUNSON, A.O. (2000)

Mitochondrial morphology during preimplantation human embryogenesis
Hum Reprod 15 (Suppl.2):148-59

SAS (Statistical Analysis Systems) Institute Inc. (2004)

Base SAS® 9.1.3 Producers Guide
Cary, NC

SAS (Statistical Analysis Systems) Institute Inc. (2004b)

SAS/STAT® 9.1 User's Guide
Cary, NC

SCHNORR, B. (1996)

Embryologie der Haustiere
3. Auflage
Ferdinand Enke Verlag, Stuttgart

SCHOEVERS, E.J., KIDSON, A., VERHEIJDEN, J.H.M., BEVERS, M.M. (2003)

Effect of follicle-stimulating hormone on nuclear and cytoplasmic maturation of sow oocytes in vitro
Theriogenology 59:2017-2028

SCHRÖTER, D., MEINECKE, B. (1995)

Comparative analysis of the polypeptide pattern of cumulus cells during maturation of porcine cumulus oocyte complexes in vivo and in vitro
Reprod. Nutr. Dev. 35:85-94

SCHUFFENHAUER, W., PEMSEL, H., DUSCHINSKI, U. (1987)

Follikelentwicklung bei Rindern
Anlage 4 zum F/E Bericht. Ovarstimulierung und Oozytengewinnung beim Rind für Zelltechniken zur Reifung und Befruchtung in vitro.
AdL der DDR, FZT Dummerstorf-Rostock; F/E Berich

SCHULTZ, R.M., WASSARMAN, P.M. (1977)

Biochemical studies of mammalian oogenesis: Protein synthesis during oocyte growth and meiotic maturation in the mouse
J. Cell. Sci. 24:167-94

SCHULTZ, R.M., MONTGOMERY, R., WARD-BAILEY, P.F., EPPIG, J.J. (1983)

Regulation of oocyte maturation in the mouse: possible roles of intercellular communications, cAMP and testosterone
Dev. Biol. 95:294-304

SEKINE, J., SAKURADA, T., OURA, R. (1992)

Optimum temperature of ovary transportation for in vitro fertilization of bovine oocytes
Vet Rec 131:372

SHAMSUDDIN, M., LARSSON, B., GUSTAFSSON, H., RODRIGUEZ-MARTINEZ, H. (1993)

In vitro development up to hatching of bovine in vitro-matured and fertilized oocytes with or without support of somatic cells
Theriogenology 39:1067-1079

- SHEA, B.F., LATOUR, J.P.A., BEDIRIAN, K.N., BAKER, R.D. (1976)**
Maturation in vitro and subsequent penetrability of bovine follicular oocytes
J. Anim. Sci. **43**:809-15
- SHI, D.S., AVERY, B., GREVE, T. (1998)**
Effects of temperature gradients in in vitro maturation of bovine oocytes
Theriogenology **50**:667-674
- SHIGENAGA, M., HAGEN, T., AMES, B. (1994)**
Oxidative damage and mitochondrial decay in ageing
Proc. Natl. Acad. Sci. USA **91**:10771-10778
- SHIMIZU, S., TSUJI, M., DEAN, J. (1983)**
In vitro biosynthesis of three sulfated glycoproteins of murine zonae pellucidae by oocytes grown in follicle culture
J. Biol. Chem. **258**:5858-5863
- SHIOYA, Y., KUWAYAMA, M., FUKUSHIMA, M., IWASAKI, S., HANADA, A. (1988)**
In vitro fertilization and cleavage capability of bovine follicular oocytes classified by cumulus cells and matured in vitro
Theriogenology **30**(3):489-496
- SIRARD, M.A., FIRST, N.L. (1988)**
In vitro inhibition of oocyte nuclear maturation in the bovine
Reproduction **39**:229-234
- SIRARD, M.A., FLORMAN, H.M., LEIBFRIED-RUTLEDGE, M.L., BARNES, F.L., SIMS, M.L., FIRST, N.L. (1989)**
Timing of nuclear progression and protein synthesis necessary for meiotic maturation of bovine oocytes
Biol. Reprod. **40**:1257-1263
- SIRARD, M.A., BILODEAU, S. (1990)**
Granulosa cells inhibit the resumption of meiosis in bovine oocytes in vitro
Biol. Reprod. **43**:777-783
- SIRARD, M.A., COENEN, K., BILODEAU, S. (1992)**
Effect of fresh or cultured follicular fractions on meiotic resumption in bovine oocytes
Theriogenology **37**(1):39-57
- SIRARD, M.A., PICARD, L., DERY, M., COENEN, K., BLONDIN, P. (1999)**
The time interval between FSH-P administration and ovarian aspiration influences the development of cattle oocytes
Theriogenology **51**:699-708
- SIRARD, M.A. (2001)**
Resumption of meiosis: mechanism involved in meiotic progression and its relation with developmental competence
Theriogenology **55**:1241-1254
- SIRIOS, J., FORTUNE, J.E. (1988)**
Ovarian follicular dynamics during estrous cycle in heifers monitored by real-time ultrasonography
Biol. Reprod. **39**:308-317

SORENSEN, R.A., WASSARMAN, P.M. (1976)

Relationship between growth and meiotic maturation of the mouse oocyte
Dev. Biol. **50**:531-536

SQUIRRELL, J.M., LANE, M., BAVISTER, B.D. (2001)

Altering intracellular pH disrupts development and cellular organization in preimplantation hamster embryos
Biol. Reprod. **64**:1845-1854

SQUIRRELL, J.M., SCHRAMM, R.D., PAPROCKI, A.M., WOKOSIN, D.L., BAVISTER, B.D. (2003)

Imaging mitochondrial organization in living primate oocytes and embryos using multiphoton microscopy
Microsc. Microanal. **9**:190-201

SREENAN, J.M. (1968)

In vivo and in vitro culture of cattle eggs
in: Proceedings 6th International Congress on Animal Reproduction and AI,
Paris
Vol. 1, S. 577-580

STEPTOE, P.C., EDWARDS, R.G. (1978)

Birth after the reimplantation of a human embryo
Lancet **2**:366

ST JOHN, J., LLYOD; R., SHOURBAGY, S. (2004)

The potential risks of abnormal transmission of mtDNA through assisted reproductive technologies
Reprod. BioMed. Online **8**:34-44

STOJKOVIC, M., MOTLIK, J., KÖLLE, S., ZAKHARTCHENKO, V., ALBERIO, R., SINOWATZ, F., WOLF, E. (1999)

Cell-cycle control and oocyte maturation: Review of literature
Reprod. Dom. Anim. **34**:335-342

STOJKOVIC, M., MACHADO, S.A., STOJKOVIC, P., ZAKHARTCHENKO, V., HUTZLER, P., GONCALVES, P.B., WOLF, E. (2001)

Mitochondrial distribution and adenosine triphosphate content of bovine oocytes before and after in vitro maturation: Correlation with morphological criteria and developmental capacity after in vitro fertilization and culture
Biol. Reprod. **64**(3):904-909

STRYER, L. (1996)

Biochemie
4. Auflage
Spektrum Verlag, Heidelberg, Berlin, Oxford

SÜSS, U., MADISON, V. (1983)

Morphology and meiotic development of bovine oocytes cultured in vitro
Arch. Androl. **11**:217-218

SÜSS, U., WÜTHRICH, K. (1985)

Stages of the first meiotic division observed in bovine oocytes matured in vitro
Theriogenology **23**(1):231

SÜSS, U., WÜTHRICH, K., STRANZINGER, G. (1988)

Chromosome configurations and time sequence of the first meiotic division in bovine oocytes matured in vitro
Biol. Reprod. **38**:871-880

SÜSS, U., KASSNER, J., WÜTHRICH, K., STRANZINGER, G. (1990)

Cumulus expansion, in vitro fertilization and embryonic development after in vitro maturation of bovine oocytes in the presence of follicle stimulating or luteinizing hormone
Reprod. Dom. Anim. **25**:3-13

SUN, Q.Y., BREITBART, H., SCHATTEN, H. (1999)

Role of the MAPK cascade in mammalian germ cells
Reprod. Fertil. Dev. **11**:443-450

SUN, Q.Y., WU, G.M., LAI, L., PARK, K.W., CABOT, R., CHEONG, H.T., DAY, B.N., PRATHER, R.S., SCHATTEN, H. (2001)

Translocation of active mitochondria during pig oocyte maturation, fertilization and early embryo development in vitro
Reproduction **122**:155-163

SUSIN, S.A., ZAMZAMI, N., CASTEDO, M., HIRSCH, T., MARCHETTI, P., MACHO, A., DAUGAS, E., GEUSKENS, M., KROEMER, G. (1996)

Bcl-2 inhibits the mitochondrial release of an apoptogenic protease
J. Exp. Med. **184**:1331-1342

SUTOVSKY, P., FLECHON, J.E., PAVLOK, A. (1995)

F-actin is involved in control of bovine cumulus expansion
Mol. Reprod. Dev. **41**:521-529

SUZUKI, H., JEONG, B.S., YANG, X. (2000)

Dynamic changes of cumulus-oocyte cell communication during in vitro maturation in porcine oocytes
Biol. Reprod. **63**:723-9

SZÖLLÖSI, D., MANDELBAUM, J., PLACHET, M., SALAT-BARAU, J., COHEN, J. (1986)

Ultrastructure of the human preovulatory oocyte
J. In Vitro Fert. Embryo Transfer **3**(4):232-242

SZÖLLÖSI, D. (1967)

Development of cortical granules and the cortical reaction in rat and hamster eggs
Anat. Rec. **159**:431-446

SZYBEK, K. (1972)

In vitro maturation of oocytes from sexually immature mice
J. Endocrinol. **54**:527-528

TAKASE, K., ISHIKAWA, M., HOSHAI, H. (1995)

Apoptosis in the degeneration process of unfertilized mouse ova
J. Exp. Med. **175**, 69-76

- TANAKA, Y., NAKADA, K., Moriyoshi, M., Sawamukai, Y. (2001)**
Appearance and number of follicles and change in the concentration of serum FSH in female bovine fetuses
Reproduction **121**:777-782
- TANGHE, S., VAN SOOM, A., MEHRZAD, J., MAES, D., DUCHATEAU, L., DE KRUIF, A. (2003)**
Cumulus contributions during bovine fertilization in vitro
Theriogenology **60**:135-149
- TARAZONA, A.M., RODRIGUEZ, J.I., RESTREPO, L.F., OLIVERA-ANGEL, M. (2006)**
Mitochondrial activity, distribution and segregation in bovine oocytes and in embryos produced in vitro
Reprod. Dom. Anim. **41**:5-11
- TESORIERO, J.V. (1982)**
A morphologic, cytochemical, and chromatographic analysis of lipid yolk formation in the oocytes of the dog
Gamete Res. **6**:267-79
- THIBAULT, B. (1977)**
Are follicular maturation and oocyte maturation independent processes?
J. Reprod. Fertil. **51**:1-15
- THIBAULT, C., SZÖLLÖSI, D., GERARD, M. (1987)**
Mammalian oocyte maturation
Reprod. Nutr. Dev. **27**:865-896
- THORNBERRY, N.A., LAZEBNIK, Y. (1998)**
Caspases: enemies within
Science **281**:1312-1316
- THOUAS, G.A., TROUNSON, A.O., WOLVETANG, E.J., JONES, G.M. (2004)**
Mitochondrial dysfunction in mouse oocytes results in preimplantation embryo arrest in vitro
Biol. Reprod. **71**(6):1936-42
- TILLY, J.L., KOWALSKI, K.I.N., JOHNSON, A.L. (1991)**
Involvement of apoptosis in ovarian follicular atresia and postovulatory regression
Endocrinology **129**:2799-2801
- TIRONE, E., D'ALLESSANDRIS, C., HASCALL, V.C., SIRACUSA, G., SALUSTRI, A. (1997)**
Hyaluronan synthesis by mouse cumulus cells is regulated by interactions between follicle-stimulating hormone (or epidermal growth factor) and a soluble oocyte factor (or transforming growth factor beta 1)
J. Biol. Chem. **272**:4787-4794
- TODOROV, J. (1994)**
Über den Einfluss verschiedener Faktoren auf die In-vitro-Befruchtungs- und Kerntransferergebnisse mit Rindereizellen
Hannover, Tierärztl. Hochschule, Dissertation

- TOKURA, T., NODA, Y., GOTO, Y., MORI, T. (1993)**
Sequential observations of mitochondrial distribution in mouse oocytes and embryos
J. Assist. Reprod. Genet. **10**(6):417-26
- TOMEK, W., TORNER, H., KANITZ, W. (2002)**
Comparative analysis of protein synthesis, transcription and cytoplasmic polyadenylation of mRNA during maturation of bovine oocytes in vitro
Reprod. Dom. Anim. **37**(2):86-91
- TOMBES, R.M., SIMERLY, C., BORISY, G.G., SCHATTEN, G. (1992)**
Meiosis, egg activation, and nuclear envelope breakdown are differentially reliant on Ca^{2+} , whereas germinal vesicle breakdown is Ca^{2+} independent in the mouse oocyte
J. Cell. Biol. **117**:799-811
- TORNER, H., BRÜSSOW, K.P., TOMEK, W., ALM, H., RATKY, J. (1998)**
Structural and functional changes in porcine cumulus-oocyte-complexes during preovulatory maturation
Reprod. Dom. Anim. **33**:249-253
- TORNER, H., KUBELKA, M., HELEIL, B., TOMEK, W., ALM, H., KUZMINA, T., GUIARD, V. (2001)**
Dynamics of meiosis and protein kinase activities in bovine oocytes correlated to prolactin treatment and follicle size
Theriogenology **55**:885-899
- TORNER, H., ALM, H., POEHLAND, R., GOELLNITZ, K., KANITZ, W. (2003)**
Parallel investigation on mitochondrial activity and chromatin configuration in horse oocytes during preovulatory maturation in vitro
Proceedings of the Third Meeting of the European Equine Gamete Group
Havemeyer Foundation Monograph Series No. 13
12.-15.10.2003, Pardubice
- TORNER, H., HELEIL, B., ALM, H., GHONEIM, I.M., SRSEN, V., KANITZ, W., TUCHSCHERER, A., FATTOUH, E.M. (2003b)**
Changes in cumulus-oocyte complexes of pregnant and non-pregnant camels (*Camelus dromedarius*) during maturation in vitro
Theriogenology **60**:977-987
- TORNER, H., BRÜSSOW, K.-P., ALM, H., RATKY, J., PÖHLAND, R., TUCHSCHERER, A., KANITZ, W. (2004)**
Mitochondrial aggregation patterns and activity in porcine oocytes and apoptosis in surrounding cumulus cells depends on the stage of pre-ovulatory maturation
Theriogenology **61**:1675-1689
- TOURTE, M., MIGNOTTE, F., MOUNOLOU, J.C. (1984)**
Heterogenous distribution and replication activity of mitochondria in *Xenopus laevis* oocytes
Eur. J. Cell. Biol. **34**(1):171-8

TOWBIN, H., STAHELIN, T., GORDON, J. (1979)

Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: procedure and some applications
Proc. Natl. Acad. Sci. U.S.A. **76**:4350-4354

TRIMARCHI, J.R., LIU, L., PORTERFILED, D.M., SMITH, P.J., KEEFE, D.L. (2000)

Oxidative phosphorylation-dependent and –independent oxygen consumption by individual preimplantation mouse embryos
Biol. Reprod. **62**:1866-1874

TROIANO, L., GRANATA, A.R., COSSARIZZA, A. (1998)

Mitochondrial membrane potential and DNA stainability in human sperm cells: a flow cytometry analysis with implications for male infertility
Exp. Cell. Res. **241**:384-393

TROUNSON, A.O., WILLADSEN, S.M., ROWSON, L.E.A. (1977)

Fertilization and development capability of bovine follicular oocytes matured in vitro and in vivo and transferred to the oviducts of rabbits and cows
J. Reprod. Fertil. **51**:321-327

TROUNSON, A., ANDRIESZ, C., JONES, G. (2001)

Maturation of human oocytes in vitro and their developmental competence
Reproduction **121**:51-75

UDE, KOCH (2002)

Die Zelle
3. Auflage 2002, Spektrum Verlag

VAN BLERKOM, J. (1991)

Microtubule mediation of cytoplasmic and nuclear maturation during the early stages of resumed meiosis in cultured mouse oocytes
Proc. Natl. Acad. Sci. USA **88**:5031-5035

VAN BLERKOM, J. (2000)

Differential mitochondrial distribution in human pronuclear embryos leads to disproportionate inheritance between blastomeres: Relationship to microtubular organization, ATP content and competence
Hum. Reprod. **15**:2621-2633

VAN BLERKOM, J. (2004)

Mitochondria in human oogenesis and preimplantation embryogenesis: engines of metabolism, ionic regulation and developmental competence
Reproduction **128**:269-280

VAN BLERKOM, J., RUNNER, M.N. (1984)

Mitochondrial reorganization during resumption of arrested meiosis in the mouse oocyte
Am. J. Anat. **171**(3):335-55

VAN BLERKOM, J., DAVIS, P.W., LEE, J. (1995)

ATP content of human oocytes and developmental potential and outcome after in-vitro fertilization and embryo transfer
Hum. Reprod. **10**:415-424

- VANDERHAYDEN, B.C., SWANN, K., EPIG, J.J. (1992)**
Mouse oocytes promote proliferation of granulosa cells from preantral and antral follicles in vitro
Biol. Reprod. **46**:1196-1204
- VAN SOOM, A., TANGHE, S., DE PAUW, I., MAES, D., DE KRUIF, A. (2002)**
Function of the cumulus oophorus before and during mammalian fertilization
Reprod. Dom. Anim. **37**:144-151
- VASSENA, R., MAPLETOFT, R.J., ALLODI, S., SINGH, J., ADAMS, G.P. (2003)**
Morphology and developmental competence of bovine oocytes relative to follicular status
Theriogenology **60**:923-932
- VAUX, D.L. (1993)**
Toward an understanding of the molecular mechanisms of physiological cell death
Proc. Natl. Acad. Sci. USA **90**:786-789
- VELILLA, E., RODRIGUEZ-GONZALEZ, E., VIDAL, F., IZQUIERDO, D., PARAMIO, M.T. (2006)**
Mitochondrial organization in prepubertal goat oocytes during in vitro maturation and fertilization
Mol. Reprod. Dev. **73**(5):617-26
- VINATIER, D., DUFOUR, P., SUBTIL, D. (1996)**
Apoptosis: A programmed cell death involved in ovarian and uterine physiology
Eur. J. Obstet. Gynecol. Reprod. Biol. **67**:85-102
- VINCENTI, L., STARVAGGI CUCUZZA, A., GIRGIS, S.M., TEODOROA, P.L., QUARANTA, G. (1998)**
IVF in Piedmontese breed: production data related to oocyte characteristics
in: Proceedings 14th Meeting European Embryo Transfer Association, Venice,
S. 266
- VOZZI, C., FORMENTON, A., CHANSON, A., SENN, A., SAHLI, R., SHAW, P., NICOD, P., GERMOND, M., HAEFLIGER, J.A. (2001)**
Involvement of connexin 43 in meiotic maturation of bovine oocytes
Reproduction **122**:619-628
- WASSARMAN, P.M., ALBERTINI, D.F. (1994)**
Development of the ovum
in: Knobil, E., Neill, J.D.: *The Physiology of Reproduction*
2. Aufl. Raven Press, New York S. 81-110
- WEBB, R.J., MARSHALL, F., SWANN, K., CARROLL, J. (2002)**
Follicle-stimulating hormone induces a gap junction-dependent dynamic change in (cAMP) and protein kinase a in mammalian oocytes
Dev. Biol. **246**:441-454
- WEHREND, A., MEINECKE, B. (1998)**
The meiotic cell cycle in oocytes of domestic animals
Reprod. Dom. Anim. **33**:289-297

WEHREND, A., MEINECKE, B. (1999)

Bovine and procine oocytes display significant differences in the duration of individual meiotic stages during in vitro maturation
Reprod. Dom. Anim. **34**:32

WICKRAMASINGHE, D., EBERT, K.M., ALBERTINI, D.F. (1991)

Meiotic competence acquisition is associated with the appearance of M-phase characteristics in growing mouse oocytes
Dev. Biol. **143**:162-172

WILDING, M., DALE, B., MARINO, M., DI MATTEO, L., ALVIGGI, C., PISATURO, M.L., LOMBARDI, L., DE PLACIDO, G. (2001)

Mitochondrial aggregation patterns and activity in human oocytes and preimplantation embryos
Hum. Reprod. Vol. **16**(5):909-917

WILDING, M., CAROTENUTO, R., INFANTE, V., DALE, B., MARINO, M., DI MATTEO L. (2001b)

Confocal microscopic analysis of the activity of mitochondria container within the "mitochondrial cloud" during oogenesis in Xenopus laevis
Zygote **9**(4):347-52

WILDING, M.G., DALE, B., DE PLACIDO, G. (2001c)

Confocal measurements of mitochondria activity during human pre-implantation embryo development
Fertil. Steril. **76**(3s):205(P-281)

WITSCHI, E. (1948)

Migration of the germ cells of human embryos from the yolk sac to the primitive gonadal folds
Contribut. Embryol. **209**:67-80

WU, B., IGNOTZ, G., CURRIE; W.B., YANG, X. (1997)

Dynamics of maturation-promoting factor and its constituent proteins during in vitro maturation of bovine oocytes
Biol. Reprod. **56**:253-259

WU, J., ZHANG, L., WANG, X. (2000)

Maturation and apoptosis of human oocytes in vitro are age-related
Fertil. Steril. **74**:1137-1141

WURTH, Y.A., KRUIP, T.A.M. (1992)

Bovine embryo production in vitro after selection of the follicles and oocytes
Proc. 12th Int. Congr. Anim. Reprod., The Hague
The Netherlands I:387-9

XUE, D., HORVITZ, H.R. (1997)

Caenorhabditis elegans CED-9 protein is a bifunctional cell-death inhibitor
Nature **390**(6657):305-8

- YANG, M.Y., RAJAMAHENDRAN, R. (2000)**
Morphological and biochemical identification of apoptosis in small, medium, and large bovine follicles and the effects of follicle-stimulating hormone and insulin-like growth factor-I on spontaneous apoptosis in cultured bovine granulosa cells
Biol. Reprod. **62**:1209-1217
- YANG, S.H., LIU, R., PEREZ, E.J., WEN, Y., STEVENS, S.M. JR., VALENCIA, T., BRUN-ZINKERNAGEL, A.M., PROKAI, L., WILL, Y., DYKENS, J., KOULEN, P., SIMPKINS, J.W. (2004)**
Mitochondrial localization of estrogen receptor beta
Proc. Natl. Acad. Sci. USA **101**:4130-4135
- YANG, X., KUBOTA, C., SUZUKI, H., TANEJA, M., BOLS, P.E., PRESICCE, G.A. (1998)**
Control of oocyte maturation in cows-biological factors
Theriogenology **49**:471-82
- YANG, Y.B., LU, K.H. (1990)**
The influence of bovine oocyte type on in vitro fertilization and subsequent development in vitro
Theriogenology **33**(1):355
- YONG, H.Y., LEE, B.C., HWANG, W.S. (1997)**
Effect oocyte diameter on in vitro nuclear maturation of korean native cattle oocyte
Theriogenology **47**:205
- YUAN, Y.Q., PEELMAN, L.J., WILLIAMS, J.L., VAN ZEVEREN, A., DE KRUIF, A., LAW, A., VAN SOOM, A. (2004)**
Mapping and transcription profiling of Casp1, 3, 6, 7 and 8 in relation to caspase activity in the bovine cumulus-oocyte complex
Anim. Genet. **35**:234-237
- YUDIN, A.I., CHERR, G.N., KATZ, D.F. (1988)**
Structure of the cumulus matrix and zona pellucida in the golden hamster: a new view of sperm interaction with oocyte-associated extracellular matrices
Cell Tiss. Res. **251**:555-564
- ZAMZAMI, N., SUSIN, S.A., MARCCHETTI, P., HIRSCH, T., GOMEZ-MONTERREY, I., CASTEDO, M., KROEMER, G. (1996)**
Mitochondrial control of nuclear apoptosis
J. Exp. Med. **183**:1533-1544
- ZERNICKA-GOETZ, M., KUBIAK, J.Z., ANTONY, C., MARO, B. (1993)**
Cytoskeletal organization of rat oocytes during metaphase II arrest and following abortive activation: A study by confocal laser scanning microscopy
Mol. Reprod. Dev. **35**:165-175
- ZEUNER, A., MÜLLER, K., REGUSZYNSKI, K., JEWGENOW, K. (2003)**
Apoptosis within bovine follicular cells and its effect on oocyte development during in vitro maturation
Theriogenology **59**:1421-1433

ZHANG, L., JIANG, S., WOZNIAK, J.P., GODKE, R.A. (1995)

Cumulus cell function during bovine oocyte maturation, fertilization, and embryo development in vitro
Mol. Reprod. Dev. **40**:338-344

ZHUO, L., KIMATA, K. (2001)

Cumulus oophorus extracellular matrix: Its construction and regulation
Cell Structure and Function **26**:189-196