

## 10. BIBLIOGRAFÍA.

- Aarons, D., H. Boettger-Tong, G. Holt, G. R. Poirier (1991).** Acrosoma reaction induces by immunoaggregation of a proteinase inhibitor bound to the murine sperm head. Mol. Reprod. Dev. 30: 258-264.
- Abascal, I., S. R. Skalaban, K. M. Grima, M. Avilés, J. A. Martínez-Menárguez, M T. Castells, J. Ballesta, J. A. Alhadef (1998).** Alteration of the isoform composition of plasma-membrane- associated rat sperm  $\alpha$ -L-fucosidase during late epididymal maturation: comparative characterization of acidic and neutral isoforms. Biochem. J. 333: 201-207.
- Abdullah, M., E. E. Widgren, M. G. O'Rand (1991).** A mammalian sperm lectin related to the rat hepatocyte lectin 2/3. Mol. Cell Biochem. 103: 155-161.
- Abe, H., T. Oikawa (1990).** Ultrastructural evidence for an association between an oviductal glycoprotein and the zona pellucida of the golden hamster egg. J. Exp. Zool. 156: 210-221.
- Abe, H., T. Oikawa (1991).** Immunocytochemical localization of an oviductal zona pellucida glycoprotein in the oviductal epithelium of the golden hamster. Anat. Rec. 229: 305-314.
- Abe, H., K Ookata, M. Abe, T. Oikawa (1992).** Immunological characterization of oviductal glycoprotein associated with the zona pellucida of the golden hamster egg. J. Exp. Zool. 262: 209-218.
- Abe, H., M. Abe (1993).** Immunological detection and characterization of an oviductal glycoprotein in the rat. J. Exp. Zool. 266: 328- 335.
- Abe, H., T. Oikawa (1993).** Observations by scanning electron microscopy of oviductal epithelial cells from cows at follicular and luteal phases. Anat. Res. 235(3): 399-410.
- Abe, H., M Onodera, S. Sugawara (1995a).** Immunological detection and characterization of an estrus-associated antigen in the goat oviduct. J. Exp.Zool. 272: 134-141.
- Abe, H., Y. Sendai, T. Satoh, H. Hoshi (1995b).** Secretory products of bovine oviductal epithelial cells support the viability and motility of bovine spermatozoa in culture in vitro. J. Exp. Zool. 61: 54-61.
- Abe, H (1996).** The mammalian oviductal epithelium: regional variations in cytological and functional aspects of the oviductal secretory cells. Histol. Histopathol. 11: 743-768.
- Abe, H., T. Satoh, H.J. Hoshi (1998).** Primary modulation by oestradiol of the production of an oviduct-specific glycoprotein by the epithelial cells in the oviduct of newborn golden hamster. Reprod. Fertil. 112: 157-163.

**Abou-Haila, A., D. R. Tulsiani (2001).** Acid glycosidases in the rat spermatocytes, spermatids and spermatzoa: enzyme activities, biosynthesis and immunolocalization. Biol. Proceed. Online. 3: 35-42.

**Adachi, K., H. Kurachi, H. Homma, H. Adachi, T. Imai, M. Sakata, O. Higashiguchi, M. Yamaguchi, K. Morishige, Y. Sakoyama (1995).** Estrogen induces epidermal growth factor (EGF) receptor and its ligands in human fallopian tube: involvement of EGF but not transforming growth factor-alpha in estrogen-induced tubal cell growth in vitro. Endocrinol. 136: 2110-2119.

**Aguilar, J., M. Reyle (2005).** The uterine tubal fluid: secretion, composition and biological effects. Anim. Reprod. 2: 91-105.

**Ahuja, K. K., G. P. Bolwell (1983).** Probable asymmetry in the organization of components of the hamster zona pellucida. J. Reprod. Fertil. 69: 49-55.

**Ahuja, K. K. (1985).** Carbohydrate determinants involved in mammalian fertilization. Am. J. Anat. 174(3): 207-223.

**Aktas, H., M.L. Leibfried-Rutledge, N. First (2003).** Meiotic state of bovine oocytes is regulated by interactions between cAMP, cumulus, and granulosa. Mol. Reprod. Dev., 65: 336-343.

**Alamanni, V (1956).** Alkaline phosphatases in fallopian tubes. Rev. Ostet. Ginecol. 11: 496-522.

**Alhadeff, J. A., S. Khunsook, K. Choowongkomon, T. Baney, V. Heredia, A. Tweedie, B. Bean (1999).** Characterization of human semen  $\alpha$ -L-fucosidases. Mol. Human. Reprod. 5: 809-815.

**Allison, A. G., E. F. Hartree (1970).** Lysosomal enzymes and their possible role in fertilization. J. Reprod. Fertil. 21: 501-515.

**Amari, S., N. Yonezawa, S. Mitsui, T. Katsumata, S. Hamano, M. Kuwayama, A. Susuki, Y. Takeda, M. Nakano (2001).** Essential role of the nonreducing terminal alpha-mannosyl residues of the N-linked carbohydrate chain of bovine zona pellucida glycoproteins in sperm-egg binding. Mol. Reprod. Dev. 59: 221-226.

**Amso, N. M., J. Crow, R. W. Shaw (1994).** Comparative immunohistochemical study of oestrogen receptors in the fallopian tube and uterus at different stages of the menstrual cycle and the menopause. Hum. Reprod. 9(6): 1027-1037.

**Anand, S. R., S. P. Kaur, P. S. Chaundhry (1977).** Distribution of  $\beta$ -N-acetylhexosaminidase and acrosin in buffalo and goat spermatozoa. Hoppe-Seyler's Z. Physiol. Chem. 358: 685-688.

**Anderson, E., D. F. Albertini (1976).** Gap junctions between the oocyte and the companion follicle cells in the mammalian ovary. *J. Cell Biol.* 71: 680-686.

**Anderson, L. L (2002).** Cerdos. En Hafez E.S. E. Hafez B (ed), Reproducción e inseminación artificial en animales. 7<sup>a</sup> ed. México: Interamericana-Mc Graw-Hill. pp: 188-198.

**Araki, Y., M. C. Orgebin-Crist, D. R. Tulsinai (1992).** Qualitative characterization of oligosaccharides chains present on the rat zona pellucida glycoconjugates. *Biol.Reprod.* 46: 912-919.

**Archibong, A. E., R. M. Petters, B. H. Johnson (1989).** Development of porcine embryos from one-and two-cell stages to blastocysts in culture medium supplemented with porcine oviduct fluid. *Biol. Reprod.* 41: 1076-1083.

**Arias, E. B., H. G. Verhage, P. A. Mavrogianis, R. C. Jaffe (1995).** Partially purified primate oviductal fluid exhibits hormonally modulated beta-hexosaminidase activity which correlates with the presence of OGP. *Biol. Reprod.* 52: 116-116 Suppl.1

**Aruoma, O. I., B. Halliwell, B. M. Hoey, J. Butler (1988).** The antioxidant action of taurine, hypotaurine and their metabolic precursor. *Biochem. J.* 256: 251-255.

**Avilés, M., I. Abascal, J. A. Martínez-Menarguez, M. T. Castells, S. R. Skalaban, J. Ballesta, J. A. Adhaleff (1996).** Immunocytochemical localization and biochemical characterization of a novel plasma membrane-associated, neutral pH optimum α-L-fucosidase from rat testis and epididymal spermatozoa. *Biochem. J.* 318: 821-831.

**Avilés, M., T. Okinaga, B. D. Sur, J. Ballesta (2000).** Differential expression of glycoside residues in the mammalian zona pellucida. *Mol. Reprod. Dev.* 57: 296-308.

**Baker, H. W., J. Brindle, D. S. Irvine, R. J. Aitken (1996).** Protective effect of antioxidants on the impairment of sperm motility by activated polymorphonuclear leukocytes. *Fertil. Steril.* 65: 411-419.

**Bavister, B. D. (1988).** Role of oviductal secretions in embryonic growth in vivo and in vitro. *Theriogenology.* 29: 143-154.

**Bearer, E. L., D. S. Friend (1990).** Morphology of mammalian sperm membranes during differentiation, maturation, and capacitation. *J. Electr. Microsc. Tech.* 16:281-297.

**Beier, H. M. (1974).** Oviductal and uterine fluids. *J. Reprod. Fertil.* 37: 221-237.

**Belve, A.R, M.F. McDonald (1968).** Directional flow of fallopian tube secretion in the Romney ewe. *J. Reprod. Fertil.* 15:357-364.

**Benau, D. A., B. T. Storey (1987).** Characterization of the mouse sperm plasma membrane

zona-binding site sensitivity to trypsin inhibitors. Biol. Reprod. 36:282-292.

**Ben-Josef D., Y Oron, R. Shalgi (1996).** Intracellular pH of rat eggs is not affected by fertilization and the resulting calcium oscillations. Biol. Reprod. 55: 461-468.

**Benoff, S., G. M. Cooper, I. Hurley (1993a).** Human sperm fertilizing potential in vitro is correlated with differential expression of a specific mannose-ligand receptor. Fertil. Steril. 59: 854-862.

**Benoff, S., I. Hurley, G. M. Cooper (1993b).** Fertilization potential in vitro is correlated with head-specific mannose-ligand receptor expression, acrosome status and membrane cholesterol content. Human. Reprod. 8: 2155-2166.

**Benoff, S., I. Hurley, G. M. Cooper, A. Hershlag (1995).** Calcium-ion channel blockers and sperm fertilization. Assist. Reprod. Rev. 5: 2-13.

**Benoff, S. (1997).** Carbohydrates and fertilization: an overview. Mol. Hum. Reprod. 3: 599-637.

**Berger, E. G., J. Roth (1997).** The Golgi apparatus. Eds. Berger EG and Roth J. Birkhäuser Verlag. Basel, Suiza.

**Bernhard, S. A. (1977).** Estructura y función de las enzimas. En H. Blume. (eds). Primera ed. Rosario, 17-Madrid-5. pp: 171-200.

**Bessey, D. A., O. H. Lowry, N. J. Brock (1946).** A method for the rapid determination of alkaline phosphatase with five cubic millilitres of serum. J. Biol. Chem. 164: 312-329.

**Bishop, D. W (1956).** Active secretion in the rabbit oviduct. Am. J. Physiol. 184: 347-352.

**Black, D. L., R. T. Duby, J. Rusen (1963).** Apparatus for the continuous collection of sheep oviduct fluid. J. Reprod. Fertil. 6: 257-260.

**Bleil, J. D., P. M. Wassarman (1980a).** Structure and function of the zona pellucida: identification and characterization of the proteins of the Mouse oocyte's zona pellucida. Dev. Biol. 76: 185-202.

**Bleil, J. D., P. M. Wassarman (1980b).** Mammalian sperm-egg interaction: identification of glycoprotein in the mouse zona pellucida possessing activity of sperm. Cell. 20: 873-882.

**Bleil, J. D., P. M. Wassarman (1983).** Sperm-egg interaction in the mouse: sequence of events and induction of the acrosome reaction by a zona pellucida glycoprotein. Dev. Biol. 95: 317-324.

**Bleil, J. D., P. M. Wassarman (1986).** Autoradiographic visualization of the mouse egg's sperm receptor bound to sperm. J. Cell Biol. 102: 1363-1371.

**Bleil, J. D., P. M. Wassarman (1988).** Galactose at the nonreducing terminus of O-linked oligosaccharides of mouse egg zona pellucida glycoprotein ZP3 is essential for glycoprotein's sperm receptor activity. Proc. Natl. Acad. Sci. USA.; 85: 678-682.

**Bleil, J. D., J. M. Greve, P. M. Wassarman (1988).** Identification of a secondary sperm receptor in the mouse zona pellucida: role in maintenance of binding of acrosome-reacted sperm to eggs. Dev. Biol. 128: 376-385.

**Boatman, D. E., B. D. Bavister (1983).** Regulation of hamster sperm capacitation by bicarbonate ion-carbon dioxide. J. Cell. Biol. 97: 40 (Abstr.).

**Boatman, D. E., R. S. Robbins (1991).** Bicarbonate: carbon-dioxide regulation of sperm capacitation, hiperactivated motility, and acrosome reactions. Biol. Reprod. 44: 806-813.

**Boettger-Ton, H. L., D.J. Aarons, B. E. Biegler, B. George, G. R. Poirier (1993).** Binding of a murine protease inhibitor to the acrosome region of the human sperm head. Mol. Reprod. Dev. 36: 346-353.

**Bogner, K., K. D. Hinsch, P. Nayudu, L. Konrad, C. Cassara, E. Hinsch (2004).** Localization and synthesis of zona pellucida proteins in the marmoset monkey (*Callithrix jacchus*) ovary. Mol. Hum. Reprod. 10(7): 481-488.

**Boice, M. L., R. D. Geisert, R. M. Blair, H. G. Verhage (1990a).** Identification and characterization of bovine oviductal glycoproteins synthesized at estrus. Biol. Reprod. 43: 457-465.

**Boice, M. L., T.J. McCarthy, P. A. Mavrogianis, P.A. Fazleabas, H. G. Verhage (1990b).** Localization of oviductal glycoproteins within the zona pellucida and perivitelline space of ovulated ova and early embryos in baboon (*Papio anubis*). Biol. Reprod. 43: 340-346.

**Boice, M. L., P. A. Mavrogianis, C.N. Murphy, R. S. Prather, B.N. Day (1992).** Immunocytochemical analysis of the association of bovine specific-glycoproteins with early embryos. J. Exp. Zool. 263: 225-229.

**Boldt, J., A. M. Howe, J B. Parkerson, L.E. Gunter, E. Kuehn (1989).** Carbohydrate involvement in sperm-egg fusion in mice. Biol. Reprod. 40: 887-896.

**Borell, U., O. Nilsson, A. Westman (1957).** Ciliary activity in the rabbit fallopian tube during oestrus and after copulation. Acta Obstet. Gynecol. Scand. 36(1): 22-28.

**Borland, R. M., J. D. Biggers, C. P. Lechene, M.L. Taymor (1980).** Elemental composition of fluid in human fallopian tube. J. Reprod. Fertil. 58: 479-482.

- Brandelli, A., P. V. Miranda, J. G. Tezon (1994).** Participation of glycosilated residues in the human sperm acrosome reaction: possible role of N-acetylglucosaminidase. *Biochim. Biophys. Acta Mol. Res.* 1220: 299-304.
- Brannian, J. D., K. A. Hansen (2002).** Leptin and ovarian folliculogenesis: implications for ovulation induction and ART outcomes. *Semin Reprod Med.* 20: 103-112.
- Braw-Tal, R., S. Yossefi (1997).** Studies in vivo and in vitro on the initiation of follicle growth in the bovine ovary. *J. Reprod. Fertil.* 109: 165-171.
- Brenner, R. M., K. S. Carlisle, D. L. Hess, B. A. Sandow, N. B. West (1983).** Morphology of the oviducts and endometria of cynomolgus macaques during the menstrual cycle. *Biol. Reprod.* 29: 1289-1302.
- Bretscher, A. M. Osborn, J Wehland, J. K. Weber (1981).** Villin associated with specific microfilamentous structures as seen by immunofluorescence microscopy on tissue sections and cells microinjected with villin. *Exp. Cell Res.* 135: 213-219.
- Brewis, I. A., R. M. Winston, H. J. Leese (1992).** Energy metabolism of the human fallopian tube. *J. Reprod. Fertil.* 95: 257-262.
- Brinster, R. L. (1965a).** Studies of the development of mouse embryos in vitro. I. The effect of osmolarity and hydrogen ion content. *J. Exp. Zool.* 158: 49-58.
- Brinster, R. L. (1965b).** Studies of the development of mouse embryos in vitro. II. The effect of energy source. *J. Exp. Zool.* 158: 59-68.
- Brown, C. R., W. K. T. Cheng (1986).** Changes in composition of the bovine zona pellucida during development of the oocyte to the 2- to- 4-cell embryo. *J. Embriol. Exp. Morphol.* 92: 183-191.
- Brunetti, P., G. W. Jourdain, S. Rosemans (1962).** The sialic acid. *J. Biol. Chem.* 237(8): 2447-2453.
- Bruni, C. B., F. Auricchio, I. Covelli (1969).** Acid  $\alpha$ -D-glucosidase from cattle liver. *J. Biol. Chem.* 244: 4735-4742.
- Brunton, W. J., R. L. Brinster (1971).** Active chloride transport in the isolated rabbit oviduct. *Am. J. Physiol.* 221: 658-661.
- Brunton, W. J. (1972).** Beta-adrenergic stimulation of transmembrane potential and short circuit current of isolated oviduct. *Nature New Biol.* 236: 12-14.
- Buhi, W. C., J.L. Vallet, F. W. Bazer (1989).** De novo synthesis and release of polypeptides from cyclic and early pregnat porcine oviductall tissue in explant culture. *J. Exp. Zool.* 252: 79-88.

**Buhi, W. C., B. O'Brien, I. M. Alvarez, G. Erdos, D. Dubois (1993).** Immunogold localization of porcine oviductal secretory proteins within the zona pellucida, perivitelline space, and plasma membrane of oviductal and uterine oocytes and early embryos. Biol. Reprod. 48(6): 1274-1283.

**Buhi, W. C., I. M. Alvarez, A. R. Pickard, E. W. McIntosh, A. J. Kouba, C. J. Ashworth, M. F. Smith (1997).** Expression of tissue inhibitor of metalloproteinase-1 and protein Messenger ribonucleic acid by the oviduct of cyclic, early-pregnant, and ovariectomized steroid-treated gilts. Biol. Reprod. 57: 7-15.

**Buhi, W. C., I. M. Alvarez, A. J. Kouba (2000).** Secreted proteins of the oviduct. Cells Tissue Organs. 166: 165-179.

**Burkman, L. J., J. W. Overstreet, D. F. Katz (1984).** A possible role for potassium and pyruvate in the modulation of sperm motility in the rabbit oviductal isthmus. J. Reprod. Fertil. 71: 367-376.

**Burks, D. J., R. Carballada, H. D. M. Moore, P. M. Saling (1995).** Interaction of tyrosine kinase from human sperm with the zona pellucida at fertilization. Science. 269: 83-86.

**Cabezas, J. A (1989).** Some comments on the type references of the official nomenclature (IUB) for  $\beta$ -N-acetylglucosaminidase,  $\beta$ -N-acetylhexosaminidase and  $\beta$ -N-acetylgalactosaminidase. Biochem. J. 261: 1059-1061.

**Calvete, J. J., L. Sanz, Z. Dostalova, E. Topfer-Petersen (1995).** Spermadhesins: sperm-coating protein involved in capacitation and zona pellucida binding. Fertilität. 11: 35-40.

**Camaioni, A., A. Salustri, M. Yangishita, V. C. Hascall (1996).** Proteoglycans and proteins in the extracellular matrix of mouse cumulus cell-oocyte complex. Arch. Biochem. Biophys. 325: 190-198.

**Cambell, D.L., L.W. Douglas, J. C. Ramge (1979).** Cannulation of the equine oviduct and chemical analysis of the oviduct fluid. Theriogenology. 12: 47-54.

**Canipari, R. (1994).** Cell-cell interactions and oocyte growth. Zygote. 2: 343-345.

**Cánoval, S., P. Coy, E. Gómez (2007).** First step in the development of a functional assay for human sperm using pig oocytes. J. Androl. 28: 273-281.

**Cattaneo, F., M. Ogioso, M. Hoshi, M. E. Perotti, M. E. Pasini (2002).** Purification and characterization of the plasma membrane glycosidases of *Drosophila melanogaster* spermatozoa. Insect Biochem. Mol. Biol. 32: 929-941.

**Chayco, C. A., M. C. Orgebin-Christ, M. D. Skudlarek, D. R. Tulsinai (2000).** Biosynthesis, processing,, and subcellular localization of rat spernbeta-D-galactosidase. Biol. Reprod. 63(3): 688-69596.

**Chen, L., S. E. Wert, E. M. Hnedrix, P. T. Russell, M. Cannon, W. J. Larsen (1990).** Hyaloronic acid synthesis and gap junction endocytosis are necessary for normal expansion of cummulus mass. Mol. Reprod. Dev. 26: 236-247.

**Chen, L., H. Zhang, R. W. Powers, P. T. Russell, W. J. Larsen (1996).** Covalent linkage between proteins of the inter- $\alpha$ -inhibitor family and hyaloronic acid is mediated by a factor produced by granulosa cells. J. Biol. Chem. 27: 19409-19414.

**Cheng, A., T. Le, M. Palacios, L. H. Bookbinder, P. M. Wassarman, F. Susuki, J. D. Bleil (1994).** Spermatozoa-egg recognition in the mouse: characterization of sp56, a sperm protein having specific affinity for ZP3. J. Cell Biol. 125: 867-878.

**Clark, G. F., M. S. Patankar, K. D. Hinsh, S. Oeninger (1995).** New concepts in sperm-zona pellucida interaction. Hum. Reprod. 10: 31-37.

**Clarke, J. T (2007).** Narrative review: Fabry disease. Ann. Intern. Med. 146: 425-433

**Cook, B., G. L. Ada (1963).** Neuraminidase in the tissues of the chick embryo and chick. Biochim. Biophys. Acta. 73: 454-461.

**Cooper, G. W., J. W. Overstreet, D. F. Katz (1999).** The motility of the rabbit spermatozoa recovered from the female reproductive tract. Gamete Res. 2: 35-42.

**Conchie, J., G. A. Levvy (1957).** Comparison of different glycosidase activities in conditions of cancer. Br. J. Cancer. 11(2): 487-493.

**Conchie, J., A. J. Hay (1959).** Mammalian glycosidases. Biochem J. 73: 327-334.

**Conchie, J., J. Findlay (1959).** Influence of gonadectomy, sex hormones and other factors, on the activity of certain glycosidases in the rat and mouse. J. Endocrinol. 18(2): 132-146.

**Conchie, J., J. Findlay, G. A. Levvy (1959).** Mammalian glycosidases. Biochem. J. 71(2): 318-325.

**Cornwall, G. A., D. R.P. Tulsiani, M. C. Orbegin-Crist (1991).** Inhibition of the mouse sperm surface  $\alpha$ -D-mannosidase inhibits sperm-egg binding in vitro. Biol. Reprod. 44: 913-921.

**Corrales, J.J., R. M. Burgo, P. galindo, I. Muñoz-Barroso, J.M. Miralles, E. Villar (2002).** Abnormal expression of acid glycosidases in seminal plasma and spermatozoa from infertil men with vaeicicele. Reprod. 1123(3): 411-5417.

**Cortés, P. P., P. A. Orihuela, L. M. Zúñiga. L. A. Veláquez, H.B. Croxatto (2004).** Sperm binding to oviductal epithelial cells in the rat: role of sialic acid residues on the epithelial surface and sialic acid-binding sites on the sperm surface. *Biol. Reprod.* 71: 1262-1269.

**Countinho, E. M., H. Maia (1971).** The contractile response of the human uterus, fallopian tubes and ovary to prostaglandins in vivo. *Fertil. Steril.* 22: 539-543.

**Critoph, F. N., K. J. Dennis (1977).** Ciliary activity in the human oviduct. *Br. J. Obstet. Gynaecol.* 84: 216-218.

**D'Haesseler, M. D., P. Simoens, W. Van den Broeck (2007).** Cell-specific localization of progesterone receptors in the bovine ovary at different stages of the oestrus cycle. *Anim. Reprod. Sci.* 98: 271-281.

**Dandekar, P., J. Aggeler, P. Talbot (1992).** Structure, distribution, and composition of the extracellular matrix of human oocytes and cumulus masses. *Hum. Reprod.* 7: 391-398.

**Daron, H. H., J. L. Aull (1985).** Purification and properties of beta-N-acetyl-D-hexosaminidase from boar seminal plasma. *Int. J. Biochem.* 17: 581-588.

**David A., B. G. Brackett, C. R. García, L. Mastroianni (1969).** Composition of rabbit oviduct fluid in ligated segments of the fallopian tube. *J. Reprod. Fertil.* 19: 285-289.

**David, A., A. Vilensky, H. Nathan (1971).** Temperature changes in different parts of the rabbit oviduct. Preliminary Report. *Harefuah.* 80: 180-182.

**David, A., D. M. Serr, B. Czernobilski (1973).** Chemical composition of human oviduct fluid. *Fertil. Steril.* 24:435-439.

**De Duve, C (1963).** The lysosome. *Sci. Am.* 208: 64-72.

**Dean, J (2004).** Reassessing the molecular biology of sperm-egg recognition with mouse genetics. *Bioessays.* 26: 29-38.

**Dell, A., S. Chalabi, R. L. Easton, S. M. Haslam, M Sutton-Smith, M. Patankar, F. Lattazio, M. panico, H. R. Morris, G. F. Clark (2003).** Murine and human zona pellucida 3 derived from mouse eggs express identical O-glycan. *PNAS. Dev. Biol.* 100: 15631-1563.

**DeMott, R. P., S. S. Suarez (1992).** Hyperacivated sperm progress in the mouse oviduct. *Biol. Reprod.* 46: 779-785.

**DeMott, R. P., R. Lefebvre., S. S. Suarez (1995).** Carbohydrate mediates the adherence of hamster sperm to oviductal epithelium. *Biol. Reprod.* 52: 1395-1403.

**Den Tandt, W. R. (1972).** Acid hydrolases in cultures amniotic cells. *Clin. Chim. Acta.* 40: 199-204.

- Dennis, J. W., M. Granovsky, C. E. Warren (1999).** Protein glycosylation in development and disease. *BioEssays.* 21: 412-421.
- Díaz, M. J., S. Giunta, J. Vals-Gianinet, S. Pereyra-Alfonso, V. Flores, D. Miceli (2000).** Proteases with plasminogen activator activity in hamster oviduct. *Mol. Reprod. Dev.* 50: 47-54.
- DiCarlantonio, G., R. Shaolian, M. Knoll, T. Magers, P. Talbot (1995).** Analysis of ciliary beat frequencies in hamster oviductal explants. *J. Exp. Zool.* 272: 142-152.
- Dickens, C. J., J. Southgate, H. J. Leese (1993).** Use of primary cultures of rabbit oviduct epithelia cells to study the ionic basis of tubal fluid formation. *J. Reprod. Fertil.* 98: 603-610.
- Dickens, C. J., H. J. Leese (1994).** The regulation of rabbit oviduct fluid formation. *J. Reprod. Fertil.* 100: 577-581.
- Dickens, C. J., S. D. Maguiness, M. T. Comer, A. Palmer, A. J. Rutherford, H. J. Leese (1995).** Human tubal fluid: formation and composition during vascular perfusion of the fallopian tube. *Hum. Reprod.* 10: 505-508.
- Dickens, C. J., M. T. Comer, J. Southgate, H. J. Leese (1996).** Human fallopian tubal epithelial cells in vitro: establishment of polarity and potential role of intracellular calcium and extracellular ATP in fluid secretion. *Human Reprod.* 11: 212-217.
- Dobrinski, I., G. G. Ignotz, P. G. A. Thomas, B. A. Ball (1996).** Role of carbohydrates in the attachment of equine spermatozoa to uterine tubal (oviductal) epithelial cells in vitro. *Am. J. Vet. Res.* 57: 1635-1639.
- Donoso, L. A., J. D. Spikes (1980).** Sheep liver beta-N-acetylhexosaminidase: partial purification, characterization and photodynamic inactivation. *Enzyme.* 25(2): 111-117.
- Dostalova, Z., J. J. Calvete, E. Töpfer-Petersen (1995a).** Interaction of non-aggregated boar AWN-1 and AQN-3 with phospholipids matrices. A model for coating of spermadhesins to the sperm surface. *Biol. Chem. Hoppe-Seyler.* 376: 237-242.
- Dostalova, Z., J. J. Calvete, L. Sanz, E. Topfer-Petersen (1995b).** Boar sperm adhesion AWN-1. Oligosaccharide and zona pellucida binding characteristics. *Eur. J. Biochem.* 230: 329-336.
- Downing, S. J., S. D. Maguiness, A. Watson, H. J. Leese (1997).** Electrophysiological basis of human fallopian tubal fluid formation. *J. Reprod. Fertil.* 111: 29-34.
- Droba, M., B. Droba, D. Bledniak (2005).** Acid glycosidases from the hen oviduct and egg lumen. *Comp. Biochem. Physiol.* 142: 391-397.

**Easton, R. L., M. S. Patankard, F. A. Lattanzio, T. H. Leaven, H. R. Morris, G. F. Clark, A. Dell (2000).** Structural analysis of murine zona pellucida glycans. *J. Biol. Chem.* 275: 7731-7742.

**Eberspaecher, U., A. Becker, P. Bringmann, L. van der Merwe, P. Donner (2001).** Immunohistochemical localization of zona pellucida proteins ZPA, ZPB and ZPC in human, cynomolgus monkey and mouse ovaries. *Cell Tissue Res.* 303: 277-287.

**Edwards, L. J., H. J. Leese (1993).** Glucosa transport and metabolism in rabbit oviduct epithelial cells. *J. Reprod. Fertil.* 99: 585-591.

**Ehrenwald, E., R. H. Foote, J. E. Parks (1990).** Bovine oviductal fluid components and their potential role in sperm cholesterol efflux. *Mol. Reprod. Dev.* 25: 195-204.

**Elhassan, Y. M., A. C. Leanez, R. J. Tasca, A. J. Watson, M. E. Westhusin (2001).** Amino acid concentration in fluids from the bovine oviduct and uterus and in KSOM-based culture media. *Theriogenology.* 55: 1907-1918.

**Ellington, J. E., G. G. Ignotz, B. A. Ball, V. N. Meyers-Wallen, W. B. Currie (1993).** De novo protein synthesis by bovine uterine tube (oviduct) epithelial cells changes during co-culture with bull spermatozoa. *Biol. Reprod.* 48: 851-856.

**Ellington, J. E., D. P. Evenson, R. W. Jr. Wright, A. E. Jones, C. S. Schneider, G. A. Hiss, R. S. Brisbois (1999).** Higher-quality human sperm in a sample selectively attach to oviduct (fallopian tube) epithelial cell sin vitro. *Fertil. Steril.* 71: 924-929.

**Engle, C. C., J. S. Dunn, R. D. Hood, D. J. III. Williams, C. W. Foley, H. F. Trout (1968).** Amino acids in sow and rabbit oviduct fluids. *J. Anim. Sci.* 27: 1786. (Abstract).

**Engle, C. C., D. M. Whitherspoon, C. W. Foley (1970).** Technique for continuous collection of equine oviduct secretions. *Am. J. Vet. Res.* 31: 1889-1896.

**Engle, C. C., C. W. Foley, E. D. Plotka, D. M. Whitherspoon, R. D. Scarth, D. D. Goetsch (1975).** Influence of mare tubal fluids on the metabolism of stallion sperm. *Am. J. Vet. Res.* 36: 1149-1152.

**Engle, C. C., C. W. Foley, E. D. Plotka, D. M. Whitherspoon (1984).** Free amino acids and protein concentrations in reproductive tract fluids of mare. *Theriogenology.* 21: 919-930.

**Eppig, J. J., A. C. Schroeder (1989).** Capacity of mouse oocytes from preantral follicles to undergo embryogenesis and development to live young after growth, maturation, and fertilization in vitro. *Biol. Reprod.* 41: 268-276.

**Eriksen, T., O Terkelsen, C. Grondal, I. Bruck (1994).** The equine oviduct—histology and PDGF localization. *Theriogenology.* 41: 191. (Abstract).

**Esaguy, N., J. E. Welch, M. G. O'Rand (1988).** Ultrastructure mapping of sperm plasma membrane autoantigen before and after acrosome reaction. Gamete Res. 19: 387-399.

**Fair, T., S. C. J. Hulshof, P. Hyttel, M. Boland, T. Greve (1997).** Bovine oocyte ultrastructure in primordial to tertiary follicles. Anat. Embryol. 195: 327-336.

**Fair, T (2003).** Follicular oocyte growth and acquisition of developmental competence. Anim. Reprod. Sci. 78: 203-216.

**Familiari, G., S. A. Nottola, G. Micara, C. Aragona, P. M. Motta (1988).** Is the sperm-binding capability of the zona pellucida linked to its surface structure? A scanning electron microscopic study of human in vitro fertilization. J. In Vitro Fertil. Embryo Transf. 5: 134-143.

**Familiari, G., C. Ver lengia, S. A. Nottola, T. Renda, G. Micara, C. Aragona, L. Zardi, P. M. Motta (1996).** Heterogeneous distribution of fibronectin, tenascin-c, and laminin immunoreactive material in the cumulus-corona cells, surrounding mature human oocytes from IVF-ET protocols-evidence that they are composed of different subpopulations: an immunohistochemical study using scanning confocal laser and fluorescence microscopy. Mol. Reprod. Dev. 43: 392-402.

**Fanchin, R. (2002).** Revisiting the role of LH in follicular development. Gynecol. Obstet. Fert. 30: 753-764.

**Farooqui, A. A., P. N. Srivastava (1980).** Isolation of  $\beta$ -N- acetylhexosaminidase from rabbit semen and its role in fertilization. Biochem. J. 191: 827- 834.

**Fayrer-Hosken, R. A., A. B. Claude, B. D. Shur (1991).** Galactosyltransferase activity is restricted to the plasma membranes of equine and bovine sperm. Mol. Reprod. Dev. 28: 74-78.

**Fazeli, A., W. J. Hage, F.P. Cheng, W. F. Voorhout, A. Marks, M. M. Bevers, B. Colenbrander (1997).** Acrosome-intact boar spermatozoa initiates binding to the homologous zona pellucida in vitro. Biol. Reprod. 56: 430-438:

**Fazleabas, A. T., H. G. Verhage (1986).** The detection of oviduct specific proteins in the baboon (*Papio anubis*). Biol. Reprod. 35: 455-462.

**Fléchon, J. E., J. Degrouard, V. Kopecny, J. Pivko, A. Pavlok, J. Motlik (2003).** The extracellular matrix of porcine mature ovocites: origin, composition and presumptive roles. Reprod. Biol. Endocrinol. 1: 124.

**Fleming, C., A. Maldjian, D. Da Costa, A. K. Rullay, D. M. Haddleton, J. St. John, P. Penny, R. C. Noble, N. R. Cameron, B. G. Davis (2005).** A carbohydrate-antioxidant hybrid

polymer reduces oxidative damage in spermatozoa and enhances fertility. *Nat. Chem. Biol.* 1(5): 270-274.

**Florman, H. M., B. T. Storey (1982).** Mouse gamete interactions: the zona is the site of the acrosome reaction leading to fertilization in vitro. *Dev. Biol.* 91: 121-130.

**Florman, H. M., K. B. Bechtol, P. M. Wassarman (1984).** Enzymatic dissection of the functions of the mouse egg's receptor for sperm. *Dev. Biol.* 106: 243-255.

**Florman, H. M., P. M. Wassarman (1985).** O-linked oligosaccharides of mouse eggs ZP3 account for its sperm receptor activity. *Cell.* 41: 313-324.

**Flowers, H. M., N. Sharon (1979).** Glycosidases: properties and application to the study of complex carbohydrates and cell surfaces. *Adv. Enzymol. Relat. Areas Mol. Biol.* 48: 29-95.

**Frohwein, Y. Z., S. Gatts (1967).** Isolation of beta-N-acetylhexosaminidase, beta-N-acetylglucosaminidase, and beta-N-acetylgalactosaminidase from calf brain. *Biochem.* 6: 2775-2782.

**Fujimori, K., S. Hizukuris, Z. Nikuni (1968).** Studies on acid alpha-1-4-glucosidase from bovine soleen. *Biochem. Biophys. Res. Commun.* 32: 811-816.

**Gandolfi, F., T. A. L. Brevini, L. Richardson, C. R. Brown, R. M. Moor (1989).** Characterization of proteins secreted by sheep oviduct epithelial cells and their function in embryonic development. *Develop.* 106: 303-312.

**Gandolfi, F., S. Modina, T. A. L. Brevini, C. Galli, R. M. Moor, A. Lauria (1991).** Oviduct ampullary epithelium contributes a glycoprotein to the zona pellucida, perivitelline space and blastomeres membrane of sheep embryos. *Eur. J. Basic Appl. Histoch.* 35: 383-392.

**Gandolfi, F., L. Passoni, S. Modina, T. A. L. Brevini, Z. Barga, A. Luria (1993).** Similarity of an oviduct specific glycoprotein between different species. *Reprod. Fertil. Dev.* 5: 443-453.

**Gandolfi, F (1995).** Functions of protein secreted by oviduct epithelial cells. *Microsc. Res. Tech.* 32: 1-12.

**Gandolfi, F., S. Modina, T. A. L. Brevini, L. Passoni, F. Petraglia, A. Lauria (1995).** Active beta A subunit is expressed in bovine oviduct. *Mol. Rep. Dev.* 40: 286-291.

**García-Alonso, J., A. Reglero, J. A. Cabezas (1990).** Purification and properties of beta-N-acetylhexosaminidase A from pig brain. *Int. J. Biochem.* 22(6): 645-651.

- Gardner, D. K., M. Lane, I. Calderón, J. Leeton (1996).** Enviroment of the preimplantation human embryo in vivo: metabolite analysis of oviduct and uterine fluids and metabolism of cumulus cells. *Fertil. Steril.* 65: 349-353.
- Gerena, R. L., G. L. Killian (1990).** Electrophoretic characterization of proteins in oviduct fluid of cows during the estrous cycle. *J. Exp. Zool.* 256: 113-120.
- Gil-Martín, E., J. Rodríguez-Berrocal, M. Paez de la Cadena, Fernández-Briera A (1997).** Alterations of glycosidases in human colonic adenocarcinoma. *Clin. Biochem.* 30(1): 17-25.
- Gillis, H. J., R. Peterson, R. Russel, L. Hook, M. Freund (1978).** Isolation and characterization of membrana vesicles from humam and boar spermatozoa: methods using nitrogen cavitation and ionophore induced vesiculation. *Prep. Biochem.* 8: 363-378.
- Gilula, N. B., M. L. Epstein, W. H. Beers (1978).** Cell-to-cell communication and ovulation. A study of the cumulus-oocyte complex. *J. Cell Biol.* 78: 58-75.
- Ginther, O. J., K. Kot, L. J. Kulick, M. C. Wiltbank (1997).** Sampling follicular fluid without altering follicular status in cattle: oestradiol concentrations early in a follicular wave. *J. Reprod. Fertil.* 109: 181-186.
- Glass, L. E (1969).** Immunocytological studies of the mouse oviduct. In Hafez ES (Ed). *The mammalian oviduct*. Chicago: Univerfsity of Chicago Press. pp. 54-72.
- Godknecht, A., T. G. Honegger (1991).** Isolation, characterization, and localization of sperm-bound-N-acetylglucosaminidase that is indispensable for fertilization in the ascidian, *Phallusia mammillata*. *Dev. Biol.* 143: 398-407.
- Godknecht, A., T G. Honegger (1995).** Specific inhibition of sperm  $\beta$ -N-acetyl glucosaminidase by the synthetic inhibitor N-acetylglucosaminono-1,5-lactone-O-(phenylcarbamonyl) oxime inhibits fertilization in the ascidian, *Phallusia mammillata*. *Dev. Growth Difer.* 37: 183-189.
- Goldstein, I. J., R. C. Hughs, M. Monsigny, T. Osawa, N. Sharon (1980).** What should be called a lectin. *Nature.* 285: 66.
- Goluboff, F. T., J. R. Mertz, L. L. Tres, A. L. Kierszenbaum (1995).** Galactosyl receptor in human testis and sperm is antigenically related to the minor C-Type ( $Ca^{(+2)}$ -dependent) lectin variant of human and rat liver. *Mol. Rerod. Dev.* 40: 460-466.
- Gosden, R., J. Krapez, D. Briggs (1997).** Growth and development of the mammalian oocyte. *Bioassays.* 19: 875-882.
- Gott, A. L., S. M. Gray, A. F. James, H. J. Leese (1988).** The mechanism and control of rabbit oviduct fluid formation. *Biol. Reprod.* 39: 758-763.

**Green, C. E., J. Bredl, W. V. Holt, P. F. Watson, A. Fazeli (2001).** Carbohydrate mediation of boar sperm binding to oviductal epithelial cells *in vitro*. Reprod. 122: 305-315.

**Green, T. R., J. H. Felman, A. L. Eicher, K. L. Pratt (1991).** Antioxidant role and subcellular location of hypotaurine and taurine in human neutrophils. Biochim. Biophys. Acta. 1073: 91-97.

**Greve, T., M. Schmidt, T. Host Hansen (1996).** Collection of oviduct fluid in heifers. Dtsch Tierarztl Wochenschr. 103: 291-293.

**Grippo, A. A., M. A. Henault, S. H. Anderson, G. J. Killian (1992).** Cation concentrations in fluid from the oviduct ampulla and isthmus of cows during the estrous cycle. J. Dairy Sci. 58:65.

**Grippo, A. A., S. H. Anderson, D. A. Chapman, M. A. Henault, G. J. Killian (1994).** Cholesterol, phospholipids, and phospholipase activity of ampullary and isthmic fluid from the bovine oviduct. J. Reprod. Fertil. 102: 87-93.

**Grippo, A. A., A. L. Way, G. J. Killian (1995).** Effect of bovine ampullary and isthmic oviductal fluid on motility, acrosome reaction, and fertility of bull spermatozoa. J. Reprod. Fertil. 105: 57-64.

**Guérin, P., Y. Menezo (1995).** Hipoteurne and taurine in gamete and embryo environments: de novo synthesis via the cysteine acid pathway in oviduct cells. Zygote. 3: 333-343.

**Guérin P., E. Gallois, S. Croteau, N. Revol, F. Maurin, J. Guillaud (1995a).** Techniques de récolte et aminogrammes des liquides tubaire et folliculaire chez les femelles domestiques. Rev. Med. Vet. 146: 805-814.

**Guérin, P., M Tappaz, J. Guillaud, Y. Menezo (1995b).** Demonstration of cysteine sulfinate decarboxilase (EC 4.1.1.29) in cultured oviduct epithelial cells in cows and goats. C. R. Acad. Sci. III. 318: 523-528.

**Gutierrez, C.G., J.H. Ralph, E.E. Telfer, I Wilmut, R Webb (2000).** Growth and antrum formation of bovine preantral follicles in long-term culture *in vitro*. Biol. Reprod. 62:1322-1328.

**Gwathmey, T. M., G. G. Ignatz, S. S. Suárez (2003).** Pdc-109 (bsp-a1/a2) promotes bull sperm transport binding to oviductal epithelium *in vitro* and may be involved in forming the oviductal sperm reservoir. Biol. Reprod. 69: 809-815.

**Haefliger, J. A., R. Bruzzone, N. A. Jenkins, D. J. H. Gilbert, N. G. Copeland, D. L. Paul (1992).** Our novel members of the connexin family of gap junction proteins. Molecular cloning, expression, and chromosome mapping. J. Biol. Chem. 25: 2057-2064.

**Hafez, E. S. E., B. Hafez (2002).** Transporte y supervivencia de los gametos. En Hafez E.S.E., B. Hafez (eds.). Reproducción e inseminación artificial en animales. 7<sup>a</sup> ed. México: Interamericana-McGraw-Hill. pp: 84-97.

**Hakomori, S., S. Yamamura, K. Handa (1998).** Signal transduction through glyco(sphingo)lipids: introduction and recent studies on glyco(sphingo)lipid-enriched microdomains. Ann. N. Y. Acad. Sci. 845: 1-10.

**Halbert, S. A., D. L. Patton (1981).** Hydrosalpinx: effect of oviductal dilatation on the egg transport. Fertil. Steril. 35(1): 69-73.

**Hall, J. C., G. J. Killian (1987).** Changes in rat sperm membrane glycosidase activities and carbohydrate and protein contents associated with epididymal transit. Biol reprod. 36: 709-718.

**Hamagashira, N., H. Oku, T. Mega, S. Hase (1996).** Purification and characterization of hen oviduct alpha 1, 2- mannosidase. J. Biochem. 119: 998-1003.

**Hamner, C. E., W. L. Williams (1964).** Identification of sperm stimulating factor of rabbit oviduct fluid. Proc. Soc. Exp. Biol. Med. 117: 240-243.

**Han, S. W., Z. M. Lei, C. V. Rao (1996).** Up-regulation of cyclooxygenase-2 gene expresion by chorionic gonadotropin in mucosal cells from human fallopian tube. Endocrinology. 137: 2929-2937.

**Hancock, L. W., L. S. Raab, N. N. Aronson Jr (1993).** Synthesis and processing of rat sperm-associated α-L-fucosidase. Boil. Reprod. 48: 1228-1238.

**Hardy, D. M., D. L. Garbers (1994).** Species-specific binding of sperm proteins to the extracellular matrix (zona pellucida) of the egg. J. Biol. Chem. 269: 19000-19004.

**Hardy, D. M., D. L. Garbers (1995).** A sperm membrane protein that binds in a species-specific manner to the egg extracellular is homologous to von Wilebrand factor. J. Biol. Chem. 270: 26025-26028.

**Hardy; K., M. A. Hooper, A.H. Handyside, A. J. Rutherford, R. M. Winston, H. J: Leese (1989).** Non-incassive measurement of glucose and pyruvate uptake by individual human oocytes and preimplantation embryos. Huma. Reprod. 4(2): 188-191.

**Harper, M. J. K (1988).** Gamete and zygote transport. In Knobil E. and Neil J. The physiology of Reproduction. New York. Raven Press: 103-134.

**Harris, J. D., D. W. Hibler, G. K. Fontenot, K. T. Hsu, E. D. Yurewicz, A. G. Sacco (1994).** Cloning and characterization of zona pellucida genes and cDNA from a variety of mammalian species: the ZPA, ZPB and ZPC families. DNA Seq. 4: 361-393.

**Hedrick, J. L., N. J. Wardrip, T. Berger (1987).** Differences in the macromolecular composition the zona pellucida isolated from pig oocytes eggs, and zigos. J. Exp: Zool. 241: 257-262.

**Hers, H. G (1963).** A-Glucosidase deficiency in generalized glycogen-storage disease (Pompe's disease). Biochem. J. 86: 11-16.

**Hinsch, E., S. Groeger, S. Oehninger, K. D. Hinsch (2003).** Localization and functional importance of a conserved zona pellucida 2 protein domain in the human and bovine ovary using monoclonal anti-ZP2 peptide antibodies. Theriogenology. 60(7): 1331-1344.

**Hochberg, C. J (1974).** Tubal amylase. Obstet. Gynecol. 43: 129-131.

**Hocking, J. D., R.D.Jolly, R. D. Batt (1972).** Deficiency of alpha-mannosidase in Angus cattle. An inherited lysosomal storage disease. Biochem. J. 128: 69-78.

**Hoodbhoy, T., J. Dean (2004).** Insights into the molecular basis of sperm-egg recognition in mammals. Reproduction. 127: 417-422.

**Hoodbhoy, T., S Joshi, E. S. Borja, S. A. Williams, P. Stanley, J. Dean (2005).** Human sperm do not bind to rat zona pellucidae despite the presence of four homologous glycoproteins. J. Biol. Chem. 280: 12721-12731.

**Horvat, B., M Osborn, I. Damjanov (1990).** Expression of villin in the mouse oviduct and the seminiferous ducts. Histochem. 93: 661-663.

**Huang, T. T. F., E. Ohzu, R. Yanagimachi (1982).** Evidence suggesting that L-fucosa is part of the recognition signal for sperm-zona pellucida attachment in mammals. Gamete Res. 5: 355-361.

**Huang, T. T. F., A. D. Fleming, R. Yanagimachi (1984).** Only acrosome-reacted spermatozoa can bind to and penetrate zona pellucida: a study of guinea pig. J. Exp. Zool. 217: 287-290.

**Huang, S., N. Driessen, M. Knoll, P. Talbot (1997).** In vitro analysis of oocytes cumulus complex pick up rate in the hamster mesocricetus auratus. Mol. Reprod. Dev. 47: 312-322.

**Humphreys-Beher, M. G., R. E. Blackwell (1989).** Identification of a deoxyribonucleic acid allelic variant for  $\alpha$ -1.4-galactosyltransferase expression associated with male sperm binding/penetration infertility. Am. J. Obstet. Gynecol. 160: 1160-1165.

**Humphreys-Beher, P. W. Garrison, M. G., R. E. Blackwell (1990).** Detection of antigalactosyltransferase antibodies in plasma from patients with antisperm antibodies. Fertil. Steril. 34: 133-137.

**Hunnicutt, G. R., P. Primakoff, D. G. Myles (1996).** Sperm surface protein PH-20 is bifunctional: one activity is a hyuronidase and a second, distinct activity is required in secondary sperm-zona binding. Biol. Reprod. 55: 80-86.

- Hunter, R. H. F., P. G. Léglise (1971).** Polyspermic fertilization following tubal surgery in pigs, with particular reference to the role of the isthmus. *J. Reprod. Fertil.* 24: 233-246.
- Hunter, R. H. F (1973).** Polyspermic fertilization in pigs after tubal deposition of excessive numbers of spermatozoa. *J. Exp. Zool.* 183: 57-63.
- Hunter, R. H. F (1974).** Chronological and cytological details of fertilization and early embryonic development in domestic pig. *Sus Scrofa. Anat. Rec.* 178: 169-186.
- Hunter, R. H. F (1982).** Técnicas para la maduración in vitro de gametos, la fecundación invitro., el cultivo de embriones y el almacenamiento a largo plazo. En Hunter RHF (ed). *Fisiología y tecnología de la reproducción de la hembra de los animales domésticos*, 1<sup>a</sup> ed. Acribia, España. pp 215-241.
- Hunter, R. H. F., R. Nichol (1983).** Transport of spermatozoa in the sheep oviduct: preovulatory sequestering of cells in the caudal isthmus. *J. Exp. Zool.* 228: 121-128.
- Hunter, R. H. F (1984).** Pre-ovulatory arrest and peri-ovulatory redistribution of competent spermatozoa in the isthmus of the pig oviduct. *J. Reprod. Fertil.* 72: 203-211
- Hunter, R. H. F., I. Wilmut (1984).** Sperm transport in the cow: peri-ovulatory redistribution of viable cells within the oviduct. *Reprod. Nutr. Dev.* 24: 597-608.
- Hunter, R. H. F., R. Nichol (1986).** A temperature preovulatory gradient between the isthmus and ampulla of pig oviducts during the phase of sperm storage. *J. Reprod. Fertil.* 87: 599-606.
- Hunter, R. F. H., B. Flechon, J. E. Flechon (1987).** Pre-and peri-ovulatory distribution of viable spermatozoa in the pig oviduct: a scanning electron microscope study. *Tissue Cell.* 9: 423-436.
- Hunter, R. H. F (1988).** The fallopian tubes. Their role in fertility and infertility. Berlin: Springer Verlag.
- Hunter, R. H. F (1989).** Ovarian programming of gamete progression and maturation in the female genital tract. *Zool. J. Linnean Society.* 95: 117-124.
- Hunter, R. F. H., B. Flechon, J.E. Flechon (1991).** Distribution, morphology and epithelial interactions of bovine spermatozoa before y after ovulation: a scanning slectron microscopy study. *Tissue Cell.* 23: 641-656.
- Hunter, R. H. F (1993).** Sperm-egg ratios and putative molecular signals to modulate gamete interactions in polytocous mammals. *Mol. Reprod. Dev.* 35: 324-327.

- Hunter, R. H. F. (1994).** Modulation of gametes and embryonic microenvironments by oviduct glycoproteins. Mol. Reprod. Dev. 39(2): 176-181.
- Hunter, R. H. F (1995).** Ovarian endocrine control of sperm progression in the fallopian tubes. Oxford. Rev. Reprod. Biol. 17: 85-124.
- Hunter, R. H. F. (1996).** Ovarian control of very low sperm/egg ratios at the commencement of the mammalian fertilisation to avoid polyspermy. Mol. Reprod. Dev. 44: 417-422.
- Hunter, R. H. F. (2003).** Physiology of the Graafian follicle and ovulation. Cambridge University Press. pp. 24-52.
- Hyde, B. A., D. L. Black (1986).** Synthesis and secretion of sulphated glycoproteins by rabbit oviduct explants in vitro. J. Reprod. Fertil. 78(1): 83-91.
- Ignotz, G. G., M. C. Lo, C. L. Pérez, T. M. Gwathmey (2001).** Characterization of a fucose-binding protein from bull sperm and seminal plasma that may be responsible for formation of the oviductal sperm reservoir. Biol. Reprod. 64: 1806-1811.
- Intra, J., F. Cenni, M. E. Perotti (2006).** An alpha-L-fucosidase potentially involved in fertilization is present on drosophila spermatozoa surface. Mol. Reprod. Dev. 73: 1149-1158.
- Ireland, J. J., J. F. Roche (1982).** Development of antral follicles in cattle after prostaglandin-induced luteolysis: changes in serum hormones, steroids in follicular fluid, and gonadotropin receptors. Endocrinology. 111: 277-286.
- Iritani, A., W. R. Gomes, N. I. Van Demark (1969).** Secretion rates and chemical composition of oviduct and uterine fluids in ewes. Biol. Reprod. 1: 72-76.
- Iritani, A., Y. Nishikawa, W. R. Gomes, N. L. VanDemark (1971).** Secretion rates and chemical composition of oviduct and uterine fluids in rabbits. J. Anim. Sci. 33: 829-835.
- Iritani, A., E. Sato, Y. Mishikawa (1974).** Secretion rates and chemical composition of oviduct and uterine fluids in sows. J. Anim. Sci. 39: 582-588.
- Izumi, T., K. Suzuki (1980).** Neutral hydrolases of rat brain. Preliminary characterization and developmental changes of neutral beta-N-acetylhexosaminidases. Biochim. Biophys. Acta. 615: 402-413.
- Jackson, L. J., G. V. F. Seaman (1972).** Physicochemical properties of some glycopeptides released from human erythrocyte membranes by trypsin. Biochem. 11: 44-49.
- Jansen, R. P. S (1978).** Fallopian tube isthmic mucus and ovum transport. Science. 201: 349-351.

**Jansen, R. P. S., V. K. Bajpai (1982).** Oviduct and mucus glycoproteins in the estrous rabbit: ultrastructure and histochemistry. Biol. Reprod. 26: 155-168.

**Jansen, R. P. S (1984).** Endocrine response in the fallopian tube. Endocr. Rev. 5: 525-551.

**Jansen, S., M. Ekhlaei-Hundrieser, E. Töpfer-Petersen (2001).** Sperm adhesion molecules: structure and function. Cells. Tissues Organs. 168:82-92.

**Jauhainen, A., T. Vanha-Perttula (1985).** Acid and neutral alpha-glycosidase in the reproductive organs and seminal plasma of the bull. J. Reprod. Fertil. 74: 669-680.

**Jauhainen, A., T. Vanha-Perttula (1986).**  $\alpha$ -L-fucosidase in the reproductive organs and seminal plasma of the bull. Biochim. Biophys. Acta. 880: 81-85.

**Jeffrey, P. L., D. H. Brown, B. I. Brown (1970).** Studies of lysosomal alpha-glucosidase. I. Purification and properties of the rat liver enzyme. Biochem. 9(6): 1403-1415.

**Jiménez-Movilla, M., M. Avilés, M. J. Gomez-Torres, P. J. Fernández-Colom, M. T. Castells, J. de Juan, A. Romeu, J. Ballesta (2004).** Carbohydrate analysis of the zona pellucida and cortical granules of human oocytes by means of ultrastructure cytochemistry. Hum. Reprod. 19: 1842-1855.

**Johnson, S. W., J. A. Alhadeff (1991).** Mammalian alpha-L-fucosidase. Comp. Biochem. Physiol. B. 99: 479-488.

**Joziasse, D. H. (1992).** Mammalian glycosyltransferases: genomic organization and protein structure. Glycobiology. 2: 271-277.

**Kalab, P., P. Visconti, P. Leclerc, G.S. Kopf (1994).** P95 the major phosphor tyrosine-containing protein in mouse spermatozoa, is a hexokinase with unique properties. J. Biol. Chem. 269: 3810-3817.

**Kan, F. W. K., S. St-Jacques, G. Bleau (1988).** Immunoelectron microscopic localization of an oviductal antigen in hamster zona pellucida by the use of a monoclonal antibody. J. Histoch. Cytoch. 36: 1441-1447.

**Kan, F. W. K., S. St-Jacques, G. Bleau (1989).** Immunocytochemical evidence for the transfer of an oviductal antigen to the zona pelludida of hamster ova after ovulation. Biol. Reprod. 40: 585-589.

**Kan, F. W. K (1990).** High-resolution localization of hyaluronic acid in the golden hamster oocyte-cummulus complex by using of a hyaluronidase-gold complex. Anat. Rec. 228: 370-382.

- Kan, F. W., E. Roux, S. St-Jackes, G. Bleau (1990).** Demonstration by lectin gold cytochemistry of transfer of glycoconjugates of oviductal origin to the zona pellucida of oocytes after ovulation in hamster. *Anat. Rec.* 226(1): 37-47.
- Kan, F. W., E. Roux, G. Bleau (1993).** Immunolocalization of oviductin in endocytic compartments in the blastomeres of developing embryos in the golden hamster. *Biol. Reprod.* 48: 77-88.
- Kan F. W., S. Zalzal, E. Roux, A. Nancy (1994).** Homogeneity in the distribution of matrix components in the hamster zona pellucida as revealed by backscattered electron imaging fracture-label. *Anat. Rec.* 239(1): 35-46.
- Kane, M. T (1974).** The effect of pH on culture of one-cell rabbit ova to blastocysts in bicarbonate buffered medium. *J. Reprod. Fertil.* 38: 477-480.
- Kapur, D. K., G. S. Gupta (1985).** Immunological specificity of hexosaminidases from human seminal plasma. *Am. J. Reprod. Immunol. Microbiol.* 7: 39-43.
- Kapur, D. K., G. S. Gupta (1986).** Purification, biochemical properties and active sites of N-acetyl-beta-D- hexosaminidase from human seminal plasma. *Biochem. J.* 236: 103-109.
- Kapur, R. P., L. V. Johnson (1985).** An oviductal fluid glycoprotein associated with ovulated mouse ova and early embryos. *Dev. Biol.* 112: 82-93.
- Kapur, R. P., L. V. Johnson (1986).** Selective sequestration of an oviductal fluid glycoprotein in the perivitelline space of mouse oocytes and embryos. *J. Exp. Zool.* 238: 249-260.
- Kapur, R. P., L. V. Johnson (1988).** Ultrastructural evidence that specialized regions of the murine oviduct contribute glycoprotein to the extracellular matrix of mouse oocytes. *Anat. Rec.* 221: 720-729.
- Kato, T., K. Hatanaka, T. Mega, S. Hase (1997).** Purification and characterization of endo-beta-N-acetylglucosaminidase from hen oviduct. *J. Biochem.* 122: 1167-1173.
- Katsumata, T., S. Noguchi, N Yonezawa, M. Tanokura, M. Nakano (1996).** Structural characterization of the N-linked carbohydrate chains of the zona pellucida glycoproteins from bovine ovarian and fertilized eggs. *Eur. J. Biochem.* 240: 448-453.
- Kavanaugh, J. F., G. J. Killian (1988).** Bovine oviductal cannulations. *J. Invest. Surg.* 1: 201-208.
- Kavanaugh, J. F., A. A. Grippo, G. J. Killian (1992).** Cannulation of the bovine ampullary and isthmic oviduct. *J. Invest. Surg.* 5: 11-17.

**Kennedy, T. G., K.D. Brown, T. J. Vaugnan (1994).** Expression of the genes for the epidermal growth factor receptor and its ligands in porcine oviduct and endometrium. Biol. Reprod. 50: 751-759.

**Khar, A., S. R. Anand (1977a).** Purification and properties of  $\beta$ -N-acetylglucosaminidase from bull sperm. Biochem Biophys. Acta. 483: 141-151.

**Khar, A., S. R. Anand (1977b).** Studies on the glycosilases of semen. Further purification and characterization of two hexosaminidases from bull seminal plasma. Biochim. Biophys. Acta. 483: 152-159.

**Killian, G. (2004).** Evidence for the role of oviduct secretions in sperm functions, fertilization and embryo development. Anim. Reprod.Sci. 82: 141-153.

**Kim, C. H., B. B. Seo, K. Yamanouchi, M. Kuromaru, T. Kawasaki, E. Hinsch, K. D. Hinsch, K. Naito, C. Chikashi, H. Tojo (2002).** Essential role of ZP moleculaes in tubal transport of embryos in mice. Mol. Reprod. Dev. 61: 327-334.

**Kim K. S., M. C. Cha, G. L. Gerton (2001).** Mouse sperm protein sp56 is a component of acrosoma matrix. Biol Reprod. 64(1): 36-41.

**Kimura, J., K. Sato, M. Okano, A. Tsukiise (1994).** Localization of ZP3 mRNA in mouse ovary by non-radioactive in situ hybridization with digoxigenin-labelled cDNA. Cell Mol. Biol. 40: 1097-1101.

**King, R. S., G. J. Killian (1994).** Purifiaction of bovine estrus associated protein and localization of binding on sperm. Biol. Reprod. 51: 34-42.

**King, R. S., H Anderson, G. J. Killian (1994).** Effect of bovine oviductal estrus associated protein on the ability of sperm to capacitated and fertilize oocytes. J. Androl. 15: 468-478.

**Kinloch, R. A., Y. Sakai, P. M. Wassarman (1995).** Mapping the mouse ZP3 combining site for the sperm by exon mapping and site-directed mutagenesis. Proc. Natl. Acad. Sci. USA. 92: 263-267.

**Kitchen, B. J., C. J. Masters (1985).** Purification and properties of bovine mammary gland N-acetyl- $\beta$ -D-glucosamine. Biochim. Biophys. Acta. 831: 125-132.

**Kjellman, B., I. Gamstorp, A. Brun, P. A. Ockerman, B. Palmgren (1969).** Mannosidosis: a clinical and histopathologic study. J. Pediatr. 75(3): 366-373.

**Kobata, A (1992).** Structures and functions of the sugar chains of glycoproteins. Eur. J. Biochem. 209: 483-501.

**Kölle, S., F. Sinowatz, G. Boie, G. Palma (1998).** Differential expression of ZPC in the bovine ovary, oocyte and embryo. Mol. Reprod. Dev. 49: 435-443.

**Kornfeld, S., I. Mellman (1989).** The biogenesis of lysosomes. Annu. Rev. Cell Biol. 5: 483-526.

**Kouba, A. J., B. R. Burckhardt, I. M. Alvarez, M. M. Goodenow, W. C. Buhi (2000).** Oviductal plaminogen activator inhibitor-1 (PAI-1): mRNA, protein, and hormonal regulation during the estrus cycle and early pregnancy in the pig. Mol. Reprod. Dev. 56:376-386.

**Kudo, K., N. Yonezawa, T. Katsumata, H. Aoki, M. Nakano (1998).** Localization of carbohydrates chains of pig ligands in the glycoprotein ZPB of the egg zona pellucida. Eur. J. Biochem. 252: 492-499.

**Kuno, M., N. Yonezawa, S. Amari, M. Hayashi, Y. Ono, L. Kiss, K. Sonohara, M. Nakano (2000).** The presence of a glycosyl phosphatidylinositol-anchored  $\alpha$ -D-mannosidase in boar sperm. IUBMB Life. 49: 485-489.

**Lam, X., C. Gieseke, M. Knoll, P. Talbot (2000).** Assay and importance of adhesive interaction between hamster (*Mesocricetus auratus*) oocyte-cumulus complexes and the oviductal epithelium. Biol. Reprod. 62: 579-588.

**Lambert, C. C (1989).** Ascidian egg release glycosidase activity which aids in the block against polyspermy. Dev. 105: 415-420.

**Lapointe, S., M. A. Sirard (1998).** Catalase and oviductal fluid reverse the decreased motility of bovine sperm in culture medium containing specific amino acids. J. Androl. 19: 31-36.

**Lathrop, W. F., E. P. Carmichael, D. G. Myles, P. Primakoff (1990).** cDNA cloning reveals the molecular structure of a sperm surface protein, PH-20; involving in sperm-egg adhesion and the wide distribution of its gene among mammals. J. Cell Biol. 1990; 111, 2939-2949.

**Larson, J. I., D. J. Miller (1997).** Sperm from a variety of mammalian species express beta 1,4-galactosyltransferase on their surface. Biol. Reprod. 57:442-453.

**Lawson, J. G (1960).** Vaginal fluid alpha-mannosidase: with special reference to cancer of the cervix. J. Obstet. Gynaecol. Br. Emp. 67:305-8.

**Leese, H. J., K. S. Jeffreis (1977).** Evidence for the facilitated diffusion of glucose into rabbit oviductal fluid. J. Reprod. Fertil. 51: 93-97.

**Leese, H. J., S. Aldridge (1979).** The movement of piruvate, lactate, and lactate dehydrogenase into rabbit oviductal fluid. J. Reprod. Fertil. 56: 619-622.

**Leese, H. J., S. Aldridge, K. S. Jeffries (1979).** The movement of amino acids into the rabbit oviductal fluid. J. Reprod. Fertil. 56: 623-626.

- Leese, H. J (1983).** Studies of the movement of glucose, pyruvate and lactate into the ampulla and isthmus of the rabbit oviduct. Quart. J. Exp. Physiol. 68: 89-96.
- Leese, H. J., A. M. Barton (1984).** Pyruvate and glucose uptake by mouse ova and preimplantation embryos. J. Reprod. Fertil. 72: 9-13.
- Leese, H. J., S. M. Gray (1985).** Vascular perfusion: a novel means of studying oviduct function. Am. J. Physiol. Endocrinol. Metab. 248: 624-631.
- Leese, H. J (1988).** The formation and function of oviduct fluid. J. Reprod. Fertil. 82: 843-856.
- Leese, H. J., J. I. Kay, J. Reischl, S. J: Dowinig (2001).** Formation of falopian tube: role of a negleted epithellium. Reprod. 121: 339-346.
- Lefebvre, R., P. J. Chenoweth, M. Drost, C.T. LeClear, M. MacCubbin, J. T. Dutton, S. S. Suarez (1995).** Characterization of the oviductal sperm reservoir in cattle. Biol. Reprod. 53: 1066-1074.
- Lefebvre, R., M. C. Lo, S. S. Suárez (1997).** Bovine sperm binding to oviductal epithelium involves fucose recognition. Biol. Reprod. 56: 1198-1204.
- Lefièvre, L., S. J. Conner, A. Salpekar, O. Olufowobi, P. Ashton, B. Pavlovic, W. Lenton, M. Afnan, I.A. Brewis, M. Monk, D.C. Hughes, C.L. Barratt (2004).** Four zona pellucida glycoproteins are expressed in the human. Hum. Reprod. 19: 1580-1586.
- Lehninger, A. L. (2006a).** Bioquímica. En Omega (ed.). Enzimas. 4<sup>a</sup> ed. Barcelona (España): Ediciones Omega. pp. 190-237.
- Lehninger, A. L. (2006b).** Bioquímica. En Omega (ed.). Glicólisis. 4<sup>a</sup> ed. Barcelona (España): Ediciones Omega. pp. 522-559.
- Leibovitz, Z., S. Gatt (1968).** Enzymatic hydrolysis of gangliosides by a neuraminidase from calf brain. Biochim. Biophys. Acta. 152: 136-143.
- Leveille, M. C., K. D. Roberts, S. Chevalier, A. Chapdelaine, G. Bleau (1987).** Uptake of an oviductal antigen by the hamster zona pellucida. Biol. Reprod. 36: 227-238.
- Levy, G. A., A. McAllan (1961).** Mammalian fucosidases. Biochem.J. 80: 435-439.
- Leyton, L., P. Saling (1989).** 95kDa sperm proteins bind ZP3 and serve as tyrosine kinase substrates in response to zona binding. Cell. 57: 1123-1130.
- Leyton, L., P. Le Guen, D. Bunch, P. Saling (1992).** Regulation of mouse gamete interaction by a sperm tyrosine kinase. Proc. Natl. Acad. Sci. USA. 89: 11692-11695.

**Liberski, E. A., D. E. Boatman (1995).** Progesterone concentrations in serum follicular fluid and oviductal fluid of the golden hamster during the periovulatory period. Biol. Reprod. 53: 477-482.

**Lin, Y., L. H. Kimmel, D. G. Myles, P. Primakoff (1993).** Molecular cloning of the human and monkey sperm surface protein PH-20. Proc. Natl. Acad. Sci. USA. 90: 10071-10075.

**Lin, Y., K. Mahan, W. F. Lathrop, D. G. Myles, P. Primakoff (1994).** A hyaluronidase activity of the sperm plasma membrane protein PH-20 enables sperm to penetrate the cumulus cell layer surrounding the egg. J. Cell Biol. 125: 1157-1163.

**Lippes, J., R.G. Enders, D. A. Pragay, W.R. Bartholomew (1972).** The collection and analysis of human fallopian tubal fluid. Contraception. 5: 85- 95.

**Lippes, J., J. Krasner, L. A. Alfonso, E. D. Dacalos, R. Lucero (1981).** Human oviductal fluid proteins. Fertil. Steril. 36: 623-629.

**Lippes, J., P. V. Wagh (1989).** Human oviductal fluid (hOF) proteins. IV. Evidence for hOF proteins binding to human sperm. Fertil. Steril. 51: 89-94.

**Litscher, E. S., K. Juntunen, A. Seppo, L. Penttila, R. Niemela, O. Renkonen, P. M. Wassarman (1995).** Oligosaccharides constructs with defined structures that inhibit binding of mouse sperm to unfertilized eggs in vitro. Biochem. 34: 4662-4669.

**Llanos, M., P. Vigil, A. M. Salgado, P. Morales (1993).** Inhibition of the acrosome reaction by trypsin inhibitors and prevention of penetration of spermatozoa through the human zona pellucida. J. Reprod. Fertil. 97: 173-178.

**López, L. C., E. M. Bayna, D. Litoff, N. L. Shaper, J. F. Shaper, B. D. Shur (1985).** Receptor function of mouse sperm surface galactosyltransferase during fertilization. J. Cell Biol. 101: 1501-1510.

**López, L. C., B. D. Shur (1987).** Redistribution of mouse sperm galactosyltransferase after the acrosome reaction. J. Cell Biol. 105: 1663-1670.

**Lucas, J. J (1979).** Effect of hormone treatments on chick oviduct  $\beta$ -N-Acetylglucosaminidase isozymes and others acid hydrolases. Arch. Biochem. Biophys. 197: 96-103.

**Lucas, H., J. Le Pendu, J. Harb, A. Moreau, S. Bercegeay, P. Barriere (1995).** Identification of spermatozoa L-selectin and of 2 potential zona pellucida ligands. C.R. Acad. Sci. Paris, Life Sci. 318:795-801.

**Macchiarelli, G., S. A. Nottola, E. Vizza, A. Kikuta, T. Murakami, P. M. Motta (1991).** Ovarian microvasculature in normal and hCG stimulated rabbits. A study of vascular corrosion casts with particular regards to the interstitium. J. Submicro. Cytol. Pathol. 23: 391-395.

**Macchiarelli, G., E. Vizza, S. A. Nottola, G. Familiari, P. M. Motta (1992).** Cellular and microvascular changes of the ovarian follicle during folliculogenesis: a scanning electron microscopy study. Arch. Histol. Cytol. 55: 191-204.

**Mack, S. R., L. J. D. Zaneveld, R. N. Peterson, W. Hunt, L. D. Russell (1987).** Characterization of human sperm plasma membrane: glycolipids and glycoproteins. J. Exp. Zool. 243: 339-346.

**Majumder, G. C., R. W. Turkington (1974).** Acrosomal and lysosomal isoenzymes of  $\beta$ -galactosidase and N-acetyl- $\beta$ -glucosaminidase in rat testis. Biochem. 13: 2857-2863.

**Majumder, G. C., S. Lessin, R. W. Turkington (1975).** Hormonal regulation of isoenzymes of N-acetylglucosaminidase and beta-galactosidase during spermatogenesis in the rat. Endocrinol. 96: 890-897.

**Makabe, S., T. Naguro, T. Stallone (2006).** Oocyte-follicle cell interactions during ovarian follicle development, as seen by high resolution scanning and transmission electrom microscopy in humans. Micros. Res. Tech. 69: 436-449.

**Makarevich, A. V., A. V. Sirotkin (1997).** The involvement of the GH/GF-I in the regulation of the secretory activity by bovine oviduct epithelial cells. Anim. Reprod. Sci. 48: 197-207.

**Malayer, J. R., P. J. Hansen, W. C. Buhi (1988).** Secretions of proteins by cultured bovine oviducts collected from estrus through early diestrus. J. Exp. Zool. 348: 345-353.

**Mao, J., G. Wu, M- F. Smith, T. C. McCauley, T. C. Cantley, R. S. Prather, B. A. Didion, B. N. Day (2002).** Effect of medium, serum type, and various concentrations of follicle stimulating hormone on porcine preantral follicular development and antrum formation in vitro. Biol. Reprod. 67: 1197-1203.

**Marinkovic, D. V., J. N. Marinkovic (1977).** Purification of two hexosaminidases from human kidney. Biochem. J. 163: 133-140.

**Martínez, N. R., J. M. Olavarria (1973).** Metabolism of sialic acid in toad oviduct. Biochim. Biophys. Acta. 320: 301-310.

**Martínez, M. A., L. Martelotto, M. O. Cabada (2000).** Purification and biological characterization of N-Acetyl- $\beta$ -D-glucosaminidase from *Bufo arenarum* spermatozoa. Mol. Reprod. Dev. 57: 194-203.

**Mass, D. H. A., B. T. Storey, L. Mastroianni (1977).** Hydrogen ion and carbon dioxide content of the oviductal fluid of Rhesus monkey (*Macaca mulata*). Fertil. Steril. 28: 981-985.

**Mass, D. H. A., B. Stein, H. Metzger, U. Schneider (1987).** Influence of microsurgical reanastomosis of the fallopian tube on luminal pH and PO<sub>2</sub> and on fertilization rate and embryo development in the rabbit oviduct. Eur. J. Obstet. Gynecol. Reprod. Biol. 24: 73-83.

- Mastroianni, L. Jr., F. Beer, U. Shah, T. H. Clewe (1961).** Endocrine regulation of oviduct secretions in the rabbit. *Endocrinology.* 68: 92-100.
- Mastroianni, L. Jr., M. Urzua, R. Stambaugh (1970).** Protein patterns in monkey oviductal fluid before and after ovulation. *Fertil. Steril.* 21: 817-820.
- Matsumoto, M., J. Hirada, N. Hirohashi, m. Hoshi (2002).** Sperm-egg binding mediated by sperm alpha-L-fucosidase in ascidian, *Halocynthia roretzi*. *Zoolog. Sci.* 19: 43-48.
- Mattioli M., P. Lucidi., B. Barboni (1994).** Transduction mechanisms for gonadotrophin-induced oocyte maturation in mammals. *Zygote.* 2: 347-349.
- McCauley, T. C., W. C. Buhi, G. M. Wu, J. Mao. J. N. Caamano, B. A. Didion, B. N. Day (2003).** Oviduct-specific glycoprotein modulates sperm-zona binding and improves efficiency of porcine fertilization in vitro. *Biol. Reprod.* 69: 828-834.
- McClean, D., I. W. Rowlands (1942).** Role of hyuronidae in fertilization. *Nature.* 150: 627-628.
- McComb, P. F., Y. Moon (1985).** Prostaglandin E and F concentration in the fimbria of the rabbit fallopian tube increases at the time of ovulation. *Acta Eur. Fertil.* 16: 423-426.
- McDaniel, J. W., H. Scalzi, D. L. Black (1968).** Influence of ovarian hormones on histology and histochemistry of the ovine oviduct. *J. Dairy Sci.* 51: 754-761.
- McDonald, M. F., A. R. Bellvè (1969).** Influence of oestrogen and progesterone on flow of fluid from the fallopian tube in ovariectomized ewe. *J. Reprod. Fertil.* 20: 51-61.
- McDonald, P., R. A. Edwards, J. F. D. Greehalgh (1973).** Lipids. In: *Animal Nutrition.* 2<sup>nd</sup> ed. Oliver and Biyd. Edinburgh. 25: 41.
- McNatty, K. P., D. A. Heath, K. M. Henderson, S. Lun, P. R. Hurst, L. M. Ellis, G. M. Montgomery, L. Morrison, D. C. Thurley (1984a).** Some aspects of thecal and granulosa cell function during follicular development in the bovine ovary. *J. Reprod. Fertil.* 72: 39-53.
- McNatty, K. P., D. A. Heath, S. Lun, J. M. Fannin, J. M. Mc Diarmid, K. M. Henderson (1984b).** Steroidogenesis by bovine theca interna in an in vitro perfusion system. *Biol. Reprod.* 30: 159-170.
- McNutt, T., L. Rogowski, R. Vasilatos-Younken, G. Killian (1992).** Adsorption of oviductal fluid proteins by the bovine sperm membrane during in vitro capacitation. *Mol. Reprod. Dev.* 33: 313-323.

- Meisler, M. H (1975).** Inhibition of human liver beta-galactosidases and beta-glucosidases by n-bromoacetyl-beta-D-galactosamine. *Biochim. Biophys. Acta.* 410: 347-353.
- Menezo, Y., P. Laviolette (1971).** Les constituants amines des sécrétions tubaires chez la porcine. *Ann. Biol. Biochem. Biophys.* 12: 383-396.
- Menezo, Y., P. Guerin (1997).** The mammalian oviduct: biochemistry and physiology. *Eur. J. Obstet. Gyn.* 73: 99-104.
- Menge, A. C., R. P. Edwards (1993).** Mucosal immunity of the reproductive tract and infertility. In Zaz RK (ed.), *Immunology of Reproduction*. CRC Press, Boca Raton, FL. 19-36.
- Mertz, J. R., P. W. Banda, A. L. Kierszenbaum (1995).** Rat sperm galactosyl receptor: purification and identification by polyclonal antibodies raised against multiple antigen peptides. *Mol. Reprod. Dev.* 41: 374-383.
- Miller, D. J., M. B. Macek, B. D. Shur (1992).** Complementarity between sperm surface  $\beta$ -1,4-galactosyltransferase and egg-coat ZP3 mediates sperm-egg binding. *Nature.* 357: 589-593.
- Miller, D. J., X. Gong, G. Decker, B. D. Shur (1993a).** Egg cortical granule N-Acetylglucosaminidase is required for the mouse zona block to polyspermy. *J. Cell Biol.* 123: 1431-1440.
- Miller, D. J., X. Gong, B. D. Shur (1993b).** Sperm require  $\beta$ -N-acetylglucosaminidase to penetrate through the egg zona pellucida. *Dev.* 118: 1279-1289.
- Miller, D. J., X. Shi, H. Burkton (2002).** Molecular basis of mammalian gamete binding. *Recent. Prog. Horm. Res.* 57: 37-73.
- Miranda, P. V., F. González Echeverría, J.A. Blanquier, D. Madurado, J.D. Tezon (2000).** Evidence for the participation of  $\beta$ -hexosaminidase in human sperm-zona pellucida interaction in vitro. *Mol. Hum. Reprod.* 6: 699-706.
- Miyagi, T., S. Tsuiki (1984).** Rat-liver lisosomal sialidase. Solubilization, substrate specificity and comparison with cytosolic sialidase. *Eur. J. Biochem.* 141: 75-81.
- Miyagi, T., S. Tsuiki (1985).** Purification and characterization of cytosolic sialidase from rat liver. *J. Biochem.* 260: 6710-6716.
- Miyagi, T., J. Sagawa, K. Konno, S. Tsuiki (1990).** Immunological discrimination of intralysosomal, cytosolic, and two membranes sialidases present in rat tissues. *J. Biochem.* 107: 794-798.
- Miyano, T. (2003).** Bringing up small oocytes to eggs in pig and cows. *Theriogenology.* 59: 61-72.

- Moor, R. M., G. M. Warnes (1979).** Regulation of meiosis in mammalian oocytes. Brist. Med. Bull. 35: 99-103.
- Moore, H. D., T. D. Hartman, A. P. Bye, P. Lutjen, M. de Witt, A. O. Trounson (1987).** Monoclonal antibody against a sperm antigen Mr 95,000 inhibits attachment of human spermatozoa to the zona pellucida. J. Reprod. Immunol. 11: 157-166.
- Moos, J., D. Faundes, G.S. Kopf, R. M. Schultz (1995).** Composition of the human zona pellucida and modifications following fertilization. Hum. Reprod. 10: 2467-2471.
- Morales, P., N. L. Cross, J. W. Overstreet, F. W. Hanson (1989).** Acrosome intact and acrosoma-reacted human sperm can initiate binding to the zona pellucida. Dev. Biol. 133: 385-392.
- Mori et al., E. N., T. Mori, S. Takasaki (1997).** Binding of mouse sperm to beta-galactose residues on egg zona pellucida and sialofetuin-coupled beads. Biochem. Biophys. Res. Commun. 238(1): 95-99.
- Mori, E., N. Yoshitani, T. Mori, S. Takasaki (2000).** Calcium ion-independent recognition of sialyl and non-sialyl N-Acetyllactosamine and Le<sup>x</sup> structures by boar sperm. Arch. Biochem. Biophys. 374: 86-92.
- Moses, D. F., M. Matkovic, E.C. Fisher, A. G. Martínez (1997).** Amino acid contents on sheep oviductal and uterine fluids. Theriogenology. 47: 336. (Abstract).
- Motta, P. M., J. Van Blerkom (1975).** A scanning electron microscopic study of rabbit spermatozoa in the female reproductive tract following coitus. Cell Tissue Res. 17: 29-44.
- Mueller, O. T., W. M. Henry, L. L. Haley, M. G. Byers, R. L. Eddy, T. B. Shows (1986).** Sialidosis and galactosialidosis: chromosomal assignment of two genes associated with neuraminidase-deficiency disorders. Proc. Natl. Acad. Sci. USA. 83: 1817-1821.
- Mujica, A., F. Navarro-Garcia, F. O. Hernandez-Gonzalez, M. De Lourdes Juarez-Mosqueda (2003).** Perinuclear theca during spermatozoa maturation leading to fertilization. Microsc. Res. Tech. 61: 76-87.
- Murdoch, R. N., I. G. White (1971).** Studies of the stimulating effect of bicarbonate on the metabolism of the ram spermatozoa. J. Reprod. Fertil. 25: 231-242.
- Murray, M., S. M. Mesinger (1994).** Early embryonic development in the Djungarian hamster (*Phodopus sungorus*) is accompanied by alterations in the distribution and intensity of an estrogen (E<sub>2</sub>)-dependent oviduct glycoprotein in the blastomere membrane and zona pellucida and its association with F-actin. Biol. Reprod. 51(6): 1126-1139.

**Myles, D. G., H. Hyatt, P. Primakoff (1987).** Binding of both acrosome-intact and acrosome-reacted guinea pig sperm to the zona pellucida during in vitro fertilization. Dev. Biol. 121: 559-567.

**Naaby-Hansen, S (1990).** Electrophoretic map of acidic and neutral human spermatozoal proteins. J. Reprod. Immunol. 17: 167-185.

**Nakano, M., Y. Hatanaka, N. Kobayashi, S. Nogushi, T. Tobita (1990).** Further fractionation of the glycoprotein families of porcine zona pellucida by anion-exchange HPLC and some characterization of the separate fractions. J. Biochem. 107: 144-150.

**Nakano, M., N. Yonezawa, Y. Hatanaka, S. Nogushi (1996).** Structure and function of the N-linked carbohydrate chains of pig zona pellucida glycoproteins. J. Reprod. Fertil. 30: 25-34.

**Nakano M., N. Yonezawa (2001).** Localization of sperm binding carbohydrate chains in pig zona pellucida glycoproteins. Cell Tiss. Organs. 168: 65-75.

**Nakatani, T., H. Shinohara, S. Takeda, S. Morisawa, T. Matsuda (1985).** Morphology of the intercapsular segment of the oviduct of the golden hamster with special reference to the ovum-transit from ruptured follicles to the ampulla. Experientia. 41: 368-370.

**Nakazawa, T., K. Ohashi, M. Yamada, S. Shinoda, F. Sahi, Y. Murata, H. Araki (1997).** Effect of different concentrations of amino acids in human serum and follicular fluid on the development of one-cell mouse embryos in vitro. J. Reprod. Fertil. 111: 327-332.

**Nancarrow, C. D., J. L. Hill, P. J. Conell (1992).** Amino acid secretion by the ovine oviduct. In Proceedings of the 1st Annual Conference of the Australian Society for Reproductive Biology, Adelaide. Adelaide: ASRB. P.24.

**Nancarrow, C. D., J. L. Hill (1995).** Coculture, oviduct secretion, and the function of oviduct-specific glycoproteins. Cell Biol. Inter. 18: 1105-1114.

**Naz, R. K., C. Brazil, J. W. Overstreet (1992).** Effects of antibodies to sperm surface fertilization antigen-1 on human sperm zona pellucida interaction. Fertil. Steril. 57: 1304-1310.

**Naz, R. K., K. Ahmad (1994).** Molecular identities of human sperm proteins that bind human zona pellucida: nature of sperm-zona interaction, tyrosine kinase activity, and involvement of FA-1. Mol. Reprod. Dev. 39: 397-408.

**Nichol, R., R. H. Hunter, D. K. Gardner, H. J. Leese, G. M. Cooke (1992).** Concentration of energy substrates in oviductal fluid and blood plasma of pigs during the peri-ovulatory period. J. Reprod. Fertil. 96: 699-707.

**Nichol, R., R. H. Hunter, G. M. Coke (1997).** Oviduct fluid pH in intact and unilaterally ovariectomized pigs. Can. J. Physiol. Pharmacol. 75: 1069-1074.

**Nichol, R., R. H. Hunter, D. K. Gardner, R. Patridge, H. J. Leese, G. M. Cooke (1998).** Concentration of energy substrates in oviduct fluid in unilaterally ovariectomized pigs. Res. Vet. Sci. 65: 263-264.

**Nieder, J., W. Augustin (1986).** Prostaglandin E and F profiles in human fallopian tubes during different phases of the menstrual cycle. gynecol. Obst. Invest. 21: 202-207.

**Nikas, G., T. Parachos, A. Psychoyos, A. H. Handyside (1994).** The zona reaction in human oocytes as seen with scanning electron microscopy. Human Reprod. 9: 2135-2138.

**Nikolajczyk, B. S., M. G. O'Rand (1992).** Characterization of rabbit testis  $\beta$ -galactosidase and arylsulfatase A: purification and localization in spermatozoa during the acrosome reaction. Biol. Reprod. 46: 366-378.

**Noguchi, S., Y. Hatanaka, T. Tobita, M. Nakano (1992).** Structural analysis of the N-linked carbohydrate chains of the 55-kDa glycoprotein family (PZP3) from porcine zona pellucida. Eur. J. Biochem. 204:1089-1100.

**Noguchi, S. N., M. Nakano (1993).** Structural characterization of N-linked carbohydrate chains from mouse zona pellucida glycoproteins ZP2 and ZP3. Biochem. Biophys. Acta. 1158: 217-226.

**Noguchi, S., N. Yonesawa, T. Katsumata, K. Hashizume, M. Kuwayama, S. Hamano, S. Watanabe, M. Nakano (1994).** Characterization of the zona pellucida glycoprotein from bovine ovarian and fertilized eggs. Biochim. Biophys. Acta. 1201: 7-14.

**Norwood, J. T., C. E. Hein, S. A. Halbert, R.G. W. Anderson (1978).** Polycationic macromolecules inhibit cilia-mediated ovum transport. Proc. Natl. Acad. Sci. USA. 75: 4413-4416.

**Nozaki, M., Y. Ito (1986).** Menstrual cycle and sensitivity of human fallopian tube to prostaglandins. Am. J. Physiol. 251: R1126-R1136.

**O'Day-Bowmn, M. B., P.A. Mavrogiannis, R. D. Minshall, H. G. Verhage (2002).** In vivo versus in vitro oviductal glycoprotein (OGP) association with the zona pellucida (ZP) in the hamster and baboon. Mol Reprod. Dev. 62(2): 248-256.

**O'Rand, M. G., E. E. Widgren, S. J. Fisher (1988).** Characterization of the rabbit sperm membrane antigen, RSA, a lectin-like zona binding protein. Dev. Biol. 129: 231-240.

**Ockerman, P. A (1969).** Mannosidosis: isolation of oligosaccharide storage material from brain. J. Pediatr. 75: 360-365.

- Ogra, S. S., K.T. Kirton, T. B. Tomasi Jr, J Lippes (1974).** Prostaglandins in human fallopian tube. *Fertil. Steril.* 25: 250-255.
- Ohman, R., A. Rosenberg, L. Svennerholm (1970).** Human brain sialidase. *Biochem.* 9: 3774-3782.
- Oikawa, T., Y. Sendai, S. Kurata, R. Yanagimashi (1988).** A glycoprotein of oviductal origin aleters biochemical propertis of the zona pellucida of hamster egg. *Gamete Res.* 19: 113-122.
- Oku, H., S Hase, T. Ikenaka (1991).** Purification and characterization of neutral alpha-mannosidase that is activated by Co<sup>2+</sup> from Japanese quail oviduct. *J. Biochem. (Tokyo)*. 110: 29-34.
- Olds, D., N. L. VanDemark (1957).** Compositon of luminal fluids in bovine female genitalia. *Fertil. Steril.* 8: 345-354.
- Oliphant, G., A. Bowling, L. A. Bowling, L. A. Eng, S. Keen, P. A. Randall. (1978).** The permeability of rabbit oviduct to proteins present in the serum. *Biol. Reprod.* 18: 516-520.
- Olson, G. E., T. D. Noland, V. P. Winfrey, D. L. Garbers (1983).** Substructure of the postacrosomal sheath of bovine spermatozoa. *J. Ultrastruct. Res.* 85: 204-218.
- Orsi, N. M., N. Gopichandran, H. Leese, H. L. Picton (2005).** Fluctuations in bovine ovarian follicular fluid composition througout the oestrus cycle. *Reproduction.* 129: 219-228.
- Overstreet, J. W., G. W. Cooper (1975).** Reduced sperm motility in the isthmus of the rabbit oviduct. *Nature.* 258:718-719.
- Overstreet, J. W., G. W. Cooper (1978).** Sperm transport in the reproductive tract of the female rabbit: I. The rapid transit phase of transport. *Biol. Reprod.* 19: 101-104.
- Overstreet, J. W., G. W. Cooper, D. F. Katz (1978).** Sperm transport in the reproductive tract of the female rabbit: II. The sustained phase of transport. *Biol. Reprod.* 19: 115-132.
- Overstreet, J. W., D. F. Katz, L. L. Johnson (1980).** Motility of rabbit spermatozoa in the secretions of the oviduct. *Biol. Reprod.* 22: 1083-1088.
- Palmer, T. N (1971).** The substrate specifity of acid glucosidase from rabbit muscle. *Biochem.* J. 124: 701-711.
- Parillo, F., O. Fagioli, C. Dall'Aglio, A. Verini-Supplizi (2000).** Lectin histochemical detection of sulfoglycans in the zona pellucida of mammalian antral oocytes. *Acta Histochem.* 102: 193-202.

- Parillo F, C. Dall'Aglio, A. Verini-Supplizi, P. Ceccarelli, A. M. Gargiulo (2003).** Immunogold study on lectin binding in the porcine zona pellucida and granulosa cells. Eur. J. Histochem. 47: 353-358.
- Parr, E. L., M. B. Parr (1986).** Uptake of immunoglobulins and other proteins from serum into epithelial cells of the mouse uterus and oviduct. J. Reprod. Immunol. 9: 330-354.
- Patton, D. L., S. A. Halbert (1979).** Electron microscopic examination of the rabbit oviductal ampulla following microsurgical end-to-end anastomosis. Fertil Steril. 32(6): 691-696.
- Perkins, J. L., L. Goode, W. A. Jr. Wilder, D. B. Henson (1965).** Collection of secretions from the oviduct and uterus of the ewe. J. Animal Sci. 24: 383-387.
- Perkins, J. L., L. Goode (1966).** Effects of stage of the estrous cycle and exogenous hormones upon the volume and composition of oviduct fluid in ewes. J. Anim. Sci. 25: 465-471.
- Perkins, J. L (1974).** Fluid flow of the oviduct. In Johnson A.D, Foley C. W. (Eds.). The oviduct and its functions. New York: Academic Press. pp. 119-132.
- Perotti, M. E., F. Cattaneo, M. E. Pasini, F. Verni, H. P. Hackstein (2001).** Male steril mutant casanova gives clues to mechanisms of sperm-egg interactions in *Drosophila melanogaster*. Mol. Reprod. Dev. 60: 248-259.
- Peterson, R. N., M. Gillot, W. Hunt, L. D. Russell (1987).** Organization of the boar spermatozoan plasma membrane: evidence for separate domains (subdomains) of integral membrane proteins in the plasma membrane overlying the principal segment. J. Cell Sci. 88: 343-349.
- Peterson, R. N., W. P. Hunt (1989).** Identification, isolation, and properties of a plasma membrane protein involved in the adhesion of boar sperm to the porcine zona pellucida. Gamete Res. 23: 103-118.
- Peterson, R. N., P. Cambell, W.P. Hunt, J. J. Bozzola (1991).** Two dimensional polyacrylamide gel electrophoresis characterization of APz, a sperm protein involved in zona binding in the pig and evidence for its binding to specific zona glycoproteins. Mol. Reprod. Dev. 28: 260-271.
- Petrunkina, A. M., R. Gehlhaar, W. Dromer, D. Waberski, E. Töpfer-Petersen (2001).** Selective sperm binding to pig oviductal epithelium in vitro. Reproduction. 121: 889-896.
- Pfeifer, T. I., N. Chegini (1994).** Immunohistochemical localization of insulin-like growth factor (IGF-1), IGF-I receptor, and IGF binding proteins 1-4 in human fallopian tube at various reproductive stages. Biol. Reprod. 50: 281-289.

**Phillips, D.M., R. Shalgi (1980).** Surface arquitecture of the mouse and hamster zona pellucida and oocyte. J. Ultrastruct. Res. 72: 1-12.

**Picton, H. M., R. G. Gosden (1999).** Oogenesis in mammals. Enciclopedia of Reproduction. Vol. 3: 488-496. Copyright by Academia Press.

**Picton, H. M (2001).** Activation of follicle development: the primordial follicle. Theriogenology. 55: 1193-1210.

**Pillai, M. C., S. Meizel (1991).** Trypsin inhibitors prevent the progesterone-initiated increase of extracellular calcium required for the human sperm acrosome reaction. J. Exp. Zool. 258: 384-393.

**Pizarro, R. A., N. R. de Martínez (1984).** Glycosidases from the rat uterus. Acta Physiol. Pharmacol. Latinoam. 34: 277-285.

**Pizarro, R. A., H. R. de Courel, R. H. de Giraudo, N. R. de Martínez (1984).** Glycosidases in the rat uterus during the Oestrus cycle. Acta Physiol. Pharmacol. Latinoam. 34: 271-276.

**Poirier, G. R., R. Robinson, R. Richardson (1986).** Evidence for a binding site on the sperm plasma membrane which recognizes the murine zona pellucida. Gamete Res. 114: 235-243.

**Preti, A., A. Lombardo, G. Tettamanti (1970).** Assay of brain particulate neuraminidase. I. Determination od N-aceylneuraminic acid released by the enzyme from endogenous substrates. Ital. J. Biochem. 19: 371-385.

**Primakoff, P., H. Hyatt, D. G. Myles (1985).** A role for the migrating sperm surface antigen, PH-20, in guinea pig spermatozoa binding to the egg zona pellucida. J. Cell Biol. 101: 2239-2244.

**Primakoff, P., A. Cowan, H. Hyatt, J. Tredick-Kline, D. G. Myles (1988).** Purification of the guinea pig sperm PH-20 antigen and detection of a site-specific of endoproteolytic activity in sperm preparations that cleaves PH-20 into twodisulfide-linked fragments. Biol. Reprod. 38: 470-482.

**Prochazka, R., E. Nagyova, G. Brem, K. Schellender, J. Motlik (1998).** Secretion of cumulus expansion-enabling factor (ceef) in porcine. Mol. Reprod. Dev. 49: 141-149.

**Prody, G. A., L.C. Greve, J. L. Hedrick (1985).** Purification and characterization of an N-acetyl-beta-D.glucosaminidase from cortical granules of *Xenopus laevis* eggs. J. Exp. Zool. 235: 335-340.

**Quinn, P., J. F. Kerin, G. M. Warnes (1985).** Improved pregnancy rate in human in vitro fertilization with the use of a medium based in the composition of human tubal fluid. Fertil. Steril. 44: 493-498.

- Rankin, T. L., P. Talbot, E. Lee, J. Dean (1999).** Abnormal zonae pellucida in mice lacking ZP1 result in early embrionic loss. *Develop.* 126: 3847-3855.
- Rankin, T. L., Z. B. Tong, P. E. Castle, e. Lee, R. Gore-Langton, L. M. Nelson, J. Dean (1998).** Human ZP3 restores fertility in ZP3 nul mice without affecting order-specific sperm binding. *Devolp.* 125: 2415-2424.
- Rankin, T., J.S. Coleman; O. Pifano,T. Hoodhoy, S. G. Turner, P. E. Castle, E. Lee, R. Gore-Langton, J. Dean (2003).** Fertility and taxon specific sperm binding persist after replacement of mouse sperm receptors with human homologs. *Dev. Cell.* 5: 33-43.
- Raychoudhury, S. S., S. S. Suárez (1991).** Porcine sperm binding to oviductal explants in culture. *Theriogenology.* 36: 1059-1070.
- Reilas, T., M. Muhtinen, M. Oksanen, T. Katila (2000).** Realtionship between embryo recovery rate and uterin lavage fluid composition in postpartum mares. *Reprod. Nutr. Dev.* 40: 383-391.
- Richards, J. S (1980).** Maturation of ovarian follicles: actions and interactions of pituitary and ovarian hormones on follicular cell differentiation. *Physiol. Rev.* 60: 51-89.
- Richardson, L. L., G Oliphant (1981).** Steroid concentrations in rabbit oviductal fluid during oestrus and pseudopregnancy. *J. Reprod. Fertil.* 62: 427-431.
- Richardson, R. T., N. Yamasaki, M.G. O'Rand (1994).** Sequence of a rabbit sperm zona pellucida binding protein and localization during the acrosome reaction. *Dev. Biol.* 165: 688-701.
- Rivera, G. M., J. E. Fortune (2003).** Selection of the dominant follicle and insulin-like growth factor (IGF)-binding proteins: evidence that pregnancy-associated plasma protein A contributes to proteolysis of IGF-binding protein 5 in bovine follicular fluid. *Endocrinology.* 144: 437-446.
- Roberts, G. P., J. M. Parker (1974).** An investigation of enzymes and hormone-binding proteins in the luminal fluid of the bovine uterus. *J. Reprod. Fertil.* 40: 305-313.
- Roberts, G. P., J. M. Parker, H. W. Symonds (1975).** Proteins in the luminal fluid from the bovine oviduct. *J. Reprod. Fertil.* 45: 301-313.
- Roberts, G. P., J. M. Parker, H. W. Symonds (1976).** Macromolecular components of genital tract fluids from the sheep. *J. Reprod. Fertil.* 84: 99-107.
- Robins, E., H. E. Hirsch, S. S. Emmons (1968).** Glycosidases in the nervous system. *J. Biol. Chem.* 243: 4246-4252.

**Rodger, J. C., R. J. Young (1981).** Glycosidase cumulus dispersal activities of acrosomal extracts from opossum (marsupial) and rabbit (eutherian) spermatozoa. Gamete Res. 4: 507-514.

**Rodríguez, C., G. Killian (1998).** Identification of ampullary and isthmic oviductal fluid proteins that associate with the bovine sperm membrane. Anim. Reprod. Sci. 54: 1-12.

**Rodríguez-Martínez, H., A. Petroni, S. Einarsson, H. Kindahl (1983).** Concentration of prostaglandins F2 alpha in the pig oviduct fluid. Prostaglandins. 25: 427-424.

**Rodríguez-Martínez, H., H. Tiethani, P. Susuki, H. Funahashi, H. Ekwall, H. Johannisson (2001).** Involvement of oviduct in sperm capacitation and oocyte development. Reprod. Suppl. 58: 129-145.

**Romar R., P. Coy, I. Campos, J. Gadea, S. Ruiz (1997).** Análisis de la concentración de diferentes cationes en el fluido oviductal porcino. I Congreso Ibérico de Reproducción Animal, Estoril (Portugal). Actas pp 107-108. BT15.

**Rossiere, T. K., P. M. Wassarman (1992).** Identification of a region of mouse zona pellucida glycoprotein mZP3 that possesses sperm receptor activity. Dev. Biol. 154: 309-317.

**Roth, J. (1996).** Protein glycosylation in the endoplasmic reticulum and the Golgi apparatus and cell type specificity of cell surface glycoconjugate expression: analysis by protein A-gold and lectin-gold technics. Histochem. Cell. Biol. 106: 79-92.

**Rouser, G., A. J. Barman, G. Kritchevsky (1961).** New method for the separation and quantitative isolation of lipids. Initial applications to the study of beef brain and spleen lipids in Gaucher's disease. Am. J. Clin. Nutr. 9: 112-123.

**Russel, L. D., R. N. Peterson, T. A. Russel, W P. Hunt (1983).** Electrophoretic map of mouse sperm plasma membrane polypeptides and localization and fractionation of specific polypeptides subclasses. Biol. Reprod. 28: 393-413.

**Russell, D. L., A. Salustri (2006).** Extracellular matrix of the cumulus-oocyte complex. Semin. Reprod. Med. 24(4): 217-227.

**Sacco, A. G., E. C. Yurewicz, M. G. Subramanian, P. D. Matzat (1989).** Porcine zona pellucida: association of sperm receptor activity with the alpha-glycoprotein component of the Mr=55,000 family. Biol. Reprod. 41: 523-532.

**Saling, P. M. (1981).** Involvement of trypsin-like activity in binding of mouse spermatozoa to zona pellucida. Proc. Natl. Acad. Sci. USA. 78: 6231-6235.

- Salustri, A., N. Yanagishita, C. B. Under Hill, T. C. Laurent, V. C. Hascall (1992).** Localization and synthesis of hyaluronic acid in the cumulus cells and the mural granulosa cells of the preovulatory follicle. Dev. Biol. 151: 541-551.
- Sant'Ana, F. J. F., E. F. Nascimento, E. J. Gimeno, C. G. Barbeito (2005).** Cyclic related and pathological changes in the lectin-binding sites in the swine oviduct. Reprod. Dom. Enim. 40: 40-45.
- Sato, N (1988).** [Cyclic changes in sex steroids, prostaglandins and oxytocin receptors of normal fallopian tube throughout the menstrual cycle]. Nippon Sanka Fujinka Gakkai Zasshi. 40: 1432-1438.
- Savio, J. D., L. Keenan, M. P. Boland, J. F. Roche (1988).** Pattern of growth of dominant follicles during the oestrous cycle in heifers. J. Reprod. Fertil. 83: 663-671.
- Sawyer, H. R., P. Smith, D. A. Heath, J. L. Juengel, S. T. J Wakefield Kenneth, P. McNatty (2002).** Formation of ovarian follicles during fetal development in sheep. Biol. Reprod. 66: 1134-1150.
- Scarchilli, L., A. Camaioni, B. Bottazzi, V. Negri, A. Doni, L. Deban, A. Bastone, G. Salvatori, A. Mantovani, G. Siracusa, A. Salustri (2007).** PTX3 interacts with inter-alpha-trypsin inhibitor implications for hialuronan organization and cumulus oophorus expansion. J. Biol. Chem. (Epub ahead of print).
- Schell, D.L., P. A. Mavroigianis, A. T. Fazleabas, H. G. Verhage (1994).** Epidermal growth factor, transforming growth factor-alpha, and epidermal growth factor receptor localization in the baboon (*Papio anubis*) oviduct during steroid treatment and the menstrual cycle. J. Soc. Gynecol. Invest. 1: 269-276.
- Schengrund, C. L., A. Rosenberg (1970).** Intracellular location and properties of bovine brain sialidase. J. Biol. Chem. 245: 6196-6200.
- Seaman, G. V. F., L. J. Jackson (1971).** Comparative properties of human erythrocyte. Sialoglycopeptides released by trypsin. Biochem. Biophys. Res. Comm. 41: 1050-1055.
- Sebon, S., Y. Hirao, T. Miyano (2003).** Interactions between the oocyte and somatic cells in follicular development.: Lesson from In Vitro Culture. J. Reprod. Dev. 49: 259-269.
- Seyama, Y., T. Yamakawa (1974).** Relationship among the multiple components of beta-N-Acetylhexosaminidase from equine kidney. J. Biochem. 74: 947-950.
- Shalgi, R., T. Raz (1997).** The role of carbohydrate residues in mammalian fertilization. Histol. Hispatol. 12: 813-822.

- Sharon, N (1974).** Glycoproteins. *Scient. Am.* 230: 78-86.
- Shimizu, S., M. Tsuji, J. Dean (1983).** In vitro biosynthesis of three sulfated glycoproteins in murine zonae pellucida by oocytes grown in follicle culture. *J. Biol. Chem.* 258: 5858-5863.
- Shivers, B.D., B.S. Dunbar (1997).** Autoantibodies to zona pellucida: a possible cause for infertility in women. *Science.* 197: 1082-1084.
- Shur, B. D., N. G. Hall (1982).** A role for mouse sperm surface galactosytransferase in sperm binding to the zona pellucida. *J. Cell Biol.* 95: 567-573.
- Shuter, E. R., E. Robins, M. L. Freeman, F. B. Jungalwaala (1970).**  $\beta$ -Hexosaminidase in the nervous system: the quantitative histochemistry of  $\beta$ -galactosaminidase in the cerebellar cortex and subjacent white matter. *J. Histochem. Cytochem.* 18: 271-277.
- Simmen, F. A., R. C. Simmen (1991).** Peptide growth factors and proto-oncogenes in mammalian conceptus development. *Biol. Reprod.* 44: 1-5.
- Sinowatz, F., W. Amselgruber, E. Töpfer-Petersen, I. Totzauer, J. J. Calvete, J. Plendl (1995).** Immunocytochemical characterization of porcine zona pellucida during follicular development. *Anat. Embriol.* 191: 41-46.
- Sinowatz, F., E. Töpfer-Petersen, S. Koller, G. Palma (2001).** Functional morphology of the zona pellucida. *Anat. Histol. Embryol.* 5: 257-263.
- Sinowatz, F., E. Wessa, C. Neumuller, G. Palma (2003).** On the species specificity of sperm binding and sperm penetration of the zona pellucida. *Reprod. Dom. Anim.* 38: 141-146.
- Skolek, R., E. Bamberg, W. Atoclk (1976).** Distribution of beta-N-acetylhexosaminidase in the genital tract of the hen (*Gallus domesticus*). *Zentralbl Veterinarmed A.* 23: 401-407.
- Skolek-Winnisch, R., F. Sinowatz, K. H. Wrobel, A. Friess (1977).** Histotopic of glycosidases in the oviduct of the quail (*Coturnix coturnix japonica*). *Acta Histochem.* 60: 253-260.
- Skudlarek, M. D., D. R. P. Tulsiani, S. K. Nagas, M. C. Orgebin-Crist (1993).**  $\beta$ -D-galactosidase of rat spermatozoa: subcellular distribution, substrate specificity, and molecular changes during epididymal maturation. *Biol. Reprod.* 49: 204-213.
- Skudlarek, M. D., A. Abou-Haila, D. R. Tulsiani (2000).** Rat spermatogenic cell beta-D-galactosidase: characterization, biosynthesis, and immunolocalization. *Exp. Cell Res.* 261(1): 139-149.
- Slayden, O. D., R. M. Brenner (2004).** Hormonal regulation and localization of estrogen, progestin and androgen receptors in the endometrium of nonhuman primates: effects of progesterone receptor antagonists. *Arch. Histol. Cytol.* 67(5): 393-409.

**Smith, E. B., J. L. Graham, J. A. Ledman, R. D. Snyder (1977).** Fucosidosis. Cutis. 19: 195-198.

**Smith, P. K., R. I. Krohn, G. T. Hermanson, A. K. Mallia, F. H. Gartner, M. D. Provenzano, E. K. Fujimoto, N. M. Goeke, B. J. Olson, D. C. Klenk (1985).** Measurement of protein using bicinchoninic acid. Anal. Biochem. 150: 76-85.

**Smith, T. T., F. Koyanagi, R. Yanagimachi (1987).** Distribution and number of spermatozoa in the oviduct of the golden hamster after natural mating and artificial insemination. Biol. Reprod. 37: 225-234.

**Smith, T. T., R. Yanagimachi (1990).** The viability of hamster spermatozoa stored in the isthmus of the oviduct: the importance of sperm-epithelium contact for sperm survival. Biol. Reprod. 42: 450-457.

**Smith, T. T., R. Yanagimachi (1991).** Attachment and release of spermatozoa from the caudal isthmus of the hamster oviduct. J. Reprod. Fertil. 91: 567-573.

**Snell, W. J., J. M. White (1996).** The molecules of mammalian fertilization. Cell. 85: 629-637.

**Snow, K., G. D. Ball (1992).** Characterization of human sperm antigens and antisperm antibodies in infertile patients. Fertil. Steril. 58: 1011-1019.

**Solomon, S. E (1979).** The localisation of beta-N-acetyl-glucosaminidase in the oviduct of the domestic fowl. Br. Poult Sci. 20: 139-142.

**Song, X. X., P. Lyu, K. W. Park, K. Iga, K. Niwa (2000).** Identification, localization and involvement of glycosidases in sperm-zona interaction using frozen-thawed ejaculated pig spermatozoa. J. Reprod. Develop. 46: 115-125.

**Spargo, S.C., R. M. Hope (2003).** Evolution and nomenclature of the zona pellucida gene family. Biol: Reprod. 68: 358-362.

**Spector, A. A (1971).** Metabolism of free fatty acids. Rorg. Biochem. Pharmacol. 6: 130-176.

**Spiessens, C. T. D'Hooghe, E. Woters, C. Meuleman, D. Vanderschueren (1998).** A-glucosidase activity in seminal plasma: predictive value for outcome in intrauterine insemination and in vitro fertilization. Fertil. Steril. 69: 735-739.

**Spilman, C. H., M. J. K. Harper (1975).** Effects of prostaglandins on oviductal motility and egg transport. Gynecol. Invest. 6: 186-205.

**Srivastava, S. K., E. Beutler (1973).** Hexosaminidase A and hexosaminidase B: studies in Tay Sachs' and Sandhoff's disease. Nature. 241: 463.

**Stanchev, P., H. Rodríguez-Matrnínez, L. E. Edqvist, H. Ericksson (1985).** Oestradiol and

progesterone receptors in pig oviduct during the oestrous cycle. J. Steroid. Biochem. 22: 115-120.

**Stambaugh, R., C. Noriega, L. Mastroinni (1969).** Bicarbonate ion: the corona cell dispersing factor of rabbit tubal fluid. J. Reprod. Fertil. 18: 51-58.

**Stanke, D. F., J. D. Sikes, D. W. DeYoung, M. E. Tumbleson (1974).** Proteins and amino acids in bovine oviductal fluid. J. Reprod. Fertil. 38: 493-496.

**Staros, A. L., G. J. Killian (1998).** In vitro association of six oviductal fluid proteins with the bovine zona pellucida. J. Reprod. Fertil. 112: 131-137.

**Steinhauer, N., A. Booz, A. R. Günzel-Apel (2004).** Morphological changes and proliferative activity in the oviductal epithelium during hormonally defined stages of the oestrous cycle in the bitch. Reprod. Domest. Anim. 39(2):110-137.

**Stevenson, K. R., D. C. Wathes (1996).** Insulin-like growth factors and their binding protein in the ovine oviduct during the oestrus cycle. J. Reprod. Fertil. 108: 31-40.

**Suárez, S. S., M. Drost, K. Redfern, W. Gottlieb (1990).** Sperm motility in the oviduct. In: B. D. Bavister, J. Cummins and E.R. S. Roldan (eds.) Fertilization in mammals. P 111-124. Serono Symposia, Norwell, Massachusetts.

**Suárez, S. S., K. Brockman, R. Lefebvre (1997).** Distribution of mucus and sperm in bovine oviduct after artificial insemination: the physical environment of oviductal sperm reservoir. Biol. Reprod. 56: 447-453.

**Suárez, S. S (1998).** The oviductal sperm reservoir in mammals: mechanisms of formation. Biol. Reprod. 58: 1105-1107.

**Suárez, S. S., I. Revah, M. L. S. Köle (1998).** Bull sperm binding to oviductal epithelium is mediated by a  $\text{Ca}^{2+}$ -dependent lectin on sperm that recognizes Lewis-a trisaccharide. Biol. Reprod. 59: 39-44.

**Suárez, S. S (2002).** Formation of a reservoir of sperm in the oviduct. Reprod. Domest. Anim. 37: 140-143.

**Suárez, S. S., A. A. Pacey (2006).** Sperm transport in the female reproductive tract. Hum. Reprod. Update. 12: 23-37.

**Sukeno, T., A. L. Tarentino, T. H. Jr. Plummer, F. Maley (1972).** Purification and properties of  $\alpha$ -D and  $\beta$ -D-mannosidases from the hen oviduct. Biochem. 11: 1483-1500.

**Sutton, R., C. D. Nancarrow, A. L. Wallace, N. W. Rigby (1984a).** Identification of an oestrous-associated glycoprotein in the oviductal fluid of the sheep. *J. Reprod. Fertil.* 72: 415-422.

**Sutton, R., A. L. C. Wallace, H Engel, C. D. Nancarrow (1984b).** Binding of sheep oviductal fluid proteins to spermatozoa. In: Lindsay DR, Pearse DT (Ed.). *Reproduction in sheep*. Canberra: Aust. Acad.Sci. pp. 140-143.

**Sutton, R., C. D. Nancarrow, A. L. C. Wallace (1986).** Oestrogen and seasonal effects on the production of an oestrus-associated glycoprotein in oviductal fluid of sheep. *J. Reprod. Fertil.* 77: 645-653.

**Suzuki, Y (1993).** In Intractable neurological disorders, human genome research and society. Proceedings of the Third International Bioethics Seminar in Fukui. Eubios Ethics Institute. pp 49-52.

**Suzuki, K., B. Erikson, H. Shimizu, T. Nagai, H. Rodríguez-Martínez (2000).** Effect of hyaluronan on monospermic penetration of porcine oocytes fertilized in vitro. *Int. J. Androl.* 23: 13-21.

**Suzuki, K., A. Asano, B. Erikson, K Niwa, T. Nagai, H. Rodríguez-Martínez (2002).** Capacitation status and in vitro fertility of boar spermatozoa: effects of seminal plasma, cumulus-oocyte-complexes-conditioned medium and hialuronan. *Int. J. Androl.* 25: 84-93.

**Swanchara, K. W., D. M. Henricks, G. P. Birrenkott, A. B. Bodine, M. E. Richardson (1995).** Expression of epidermal growth factor (EGF) and EGF receptor in the porcine oviduct. *Biol. Reprod.* 53: 911-922.

**Swanson, W. J., Z. Yang, M. F. Wolfner, C. F. Aquaro (2001).** Positive Darwinian selection drives the evolution of several female reproductive proteins in mammals. *Proc. Nat. Acad. Sci. USA.* 98(5): 2509-2514.

**Taitzoglou, I A., A. N. Kokoli, G. J. Killian (2007).** Modifications of surface carbohydrates on bovine spermatozoa mediated by oviductal fluid: a flow cytometric study using lectins. *Int. J. Androl.* 30: 108-114.

**Takada, M., N. Yonezawa, M. Yoshizawa, S. Nogushi, Y. Hatanaka, T. Nagai, K. kikuchi, H. Aoki, M. Nakano (1994).** pH-sensitive dissociation and association of  $\beta$ -N-acetylglucosaminidase from boar sperm acrosome. *Biol. Reprod.* 50: 860-868.

**Talbot, P (1984).** Hyaluronidase dissolves a component in the hamster zona pellucida. *J. Exp. Zool.* 229: 309-316.

**Talbot, P., G. DiCarlantonio (1984a).** The oocyte-cumulus complex: ultrastructure of the extracellular components in hamsters and mice. *Gamete Res.* 10: 127-142.

- Talbot, P., G. DiCarlantonio (1984b).** Ultrastructure of opossum oocyte investing coats and their sensitivity to trypsin and hialuronidase. Dev. Biol. 103: 159-167.
- Talbot, P., C. Geiske, M. Knoll (1999).** Oocyte pick up by the mammalian oviduct. Mol. Biol. Cell. 10: 5-8.
- Tanphaichitr, N., A. Tayabali, C. Gradil, S. Juneja, M. C. Leveille, C. A. Lingwood (1992).** Role for a germ cell-specific sulfolipid-immobilizing protein (SLIP1) in mouse in vivo fertilization. Mol. Reprod. Dev. 32: 17-22.
- Tanphaichitr, N., J. Smith, S. Mongkolsirikiwart (1993).** Role of a gamete-specific sulfoglycolipid immobilizing protein on mouse sperm-egg binding. Dev. Biol. 156: 164-175.
- Tarentino, A. L., F. Maley (1976).** Purification and properties of an endo- $\beta$ -N-acetylglucosaminidase from hen oviduct. J. Biol. Chem. 251: 6537-6543.
- Tay, J. L., A. J. Rutherford, S. R. Killick, S. D. Maguiness, R. J. Partridge, H. J. Leese (1997).** Human fluid: tuba production, nutrient composition response to adrenergic agents. Human Reprod. 12: 2451-2456.
- Tettamanti G, V. Zambotti (1968).** Purification of neuraminidase from pig brain and its action on different gangliosides. Enzymologia. 35:61-74.
- Tettamanti, G., A. Lombardo, A. Preti, V. Zambotti (1970).** Effect of temperature and triton X-100 on the activity of particular neuraminidase from rabbit brain. Enzymologia. 39: 65-71.
- Thibault, C., D. Szollosi, M. Gerard (1987).** Mammalian oocyte maturation. Reprod. Nutr. Dev. 27: 865-896.
- Töpfer-Petersen, E., J. Calvete (1995).** Molecular mechanisms of the interaction between sperm and the zona pellucida in mammals: studies on the pig. Int. J. Androl., Suppl 1 2: 20-26.
- Töpfer-Petersen, E., A. Wagner, J. Friedrich, A. M. Petrunkina, M. Ekhlas-Hundrieser, D. Waberski, W. Drommer (2002).** Function of the mammalian oviductal sperm reservoir. J. Exp. Zool. 292: 210-215.
- Topper, E. K., L. Kruijt, J. Calvete, K. Mann, E. Töpfer-Petersen, H. Woelders (1997).** Identification of bovine zona pellucida glycoprotein. Mol. Reprod. Dev. 46: 344-350.
- Trounson, A., C. Anderiesz, G. Jones (2001).** Maturation of human oocytes in vitro and their developmental competence. Reproduction 121: 51-755.
- Tsafriri, A., H. R. Linder, U. Zor, S. A. Lamprecht (1972).** In vitro induction of meiotic division in follicle-enclosed rat oocytes by LH, cyclic AMP and prostaglandin E<sub>2</sub>. J. Reprod.

Fertil. 31: 39-50.

**Tsilianni, T., A. Kragiannidis, P. Saratsis, P. Brikas (2003).** Enzyme activiy in bovine cervical mucus during spontaneous and induced estrus. Can. J. Vet. Res. 67: 189-193.

**Tsilianni, T., G. S. Amiridis, E. Vainas (2005).** Glycosidase activity in the uterine luminal fluid of cows after superovulation. Reprod. Domest. Anim. 40: 361. (Abstract).

**Tsilianni, T., L. Vandaelen, A. de Kruif, A. Van Soom (2006).** Role of two glycosidases ( $\alpha$ -mannosidase and  $\beta$ -N- acetylglucosaminidase) on in vitro bovine embryonic development. Reprod. Domest. Anim. 41: 149-152.

**Tsuiki, A., H. Hoshiai, K. Takahashi, M. Susuki, K. Hoshi (1986).** Sperm-egg interactions observed by electron microscopy. Arch. Androl. 16: 35-47.

**Tulsiani, D. R. P., R. Carubelli (1971).** Studies on the soluble and lysosomal neuraminidase of rats mammary glands. Biochim. Biophys. Acta. 227: 139-153.

**Tulsiani, D. R. P., O. Touster (1981).** Thymus involution and inhibition of sperm growth accompanies streptocin-induced diabetes in rat liver Golgi preparationship. Arch. Biochem. Biophys. 262: 6506-6514.

**Tulsiani, D. R. P., M. D. Skudlarek, M. C. Orgebin-Crist (1989).** Novel alpha-D-manosidase of the rat aperm plasma membranes: characterization and potential role in sperm-egg interactions. J. Cell Biol. 109: 1257-1267.

**Tulsiani, D. R. P., M. D. Skudlarek, M. C. Orgebin-Crist (1990).** Human sperm plasma membrane possesses alpha-D-mannosidase activity but not galctosyltransferase activity. Biol. Reprod. 42: 843-858.

**Tulsiani, D. R. P., S. K. NagDas, G. A. Cornwall, M. C. Orgebin-Crist (1992).** Evidence for the presence of high mannose hybrid/oligossacharide chain(s) on the mouse ZP2 and ZP3. Biol.Reprod. 46: 93-100.

**Tulsiani, D. R. P., M. D. Skudlarek, Y Araki, M. C. Orgebin-Christ (1995).** Purification and characterization of two formas of beta-D-galactosidase from rat epididymal luminal fluid: evidence for their role in the modification of sperm plasma membrane glycoprotein(s). Biochem. 305: 41-50.

**Tulsiani, D. R. P., S. K. NagDas, M.D. Skudlarek, M. C. Orgebin-Crist (1995).** Rat sperm plasma membrane mannosidase: localization and evidence for proteolytic processing during epididymal maturation. Dev. Biol. 167: 584-595.

- Tulsiani, D. R. P., C. A. Chayko, M. C. Orgebin-Crist, Y. Araki (1996).** Temporal surge of glycosyltransferase activities in the genital tract of the hamster during the estrous cycle. Biol. Reprod. 54: 1032-1037.
- Tulsiani, D. R. P., A. Abou-Haila, C. R. Loeser, B. M. J. Pereira (1998).** The biological and functional significance of the acrosome and acrosomal enzymes in mammalian fertilization. Exp. Cell Res. 240: 151-164.
- Tulsiani, D. R. P (2000).** Carbohydrates mediate sperm-ovum adhesion and triggering acrosome reaction. J. Androl. 2: 87-97.
- Tulsiani, D. R. P (2003).** Glycan modifying enzymes in luminal fluid of rat epididymis: are they involved in altering sperm surface glycoproteins during maturation? Microsc. Res. Tech. 61(1): 18-27.
- Tulsiani, D. R. P (2006).** Glycan-modifying enzymes in luminal fluid of the mammalian epididymis: an overview of their role in sperm maturation. Mol. Cell Endocrinol. 250: 58-65.
- Vanroose, G., H. Nauwynck, A. V. Soom, M.T. Ysebaert, G. Charlier, P. V. Oostveldt, A. de Kruif (2000).** Structural aspects of the zona pellucida of in vitro-produced bovine embryos: a scanning electron and confocal laser scanning microscopic study. Biol. Reprod. 62: 463-469.
- Velásquez, J. G., S. Cánovas, P. Barajas, J. Marcos, M. Jiménez-Movilla, R. Gutiérrez Gallego, J. Ballesta, M. Avilés, P. Coy (2007).** Role of sialic acid in bovine sperm.zona pellucida binding. Mol. Reprod. Dev. 74: 617-628.
- Veldhuis, J. D., P. A. Klase, J. F. 3<sup>rd</sup> Strauss, J. M. Hammond (1982).** The role of estradiol as a biological amplifier of the actions of follicle-stimulating hormone: in vivo studies in swine granulosa cells. Endocrinology. 111: 144-151.
- Venditti, J. J., K. A. Donigan, B. S. Bean (2007).** Crypticity and functional distribution of the membrane associated α-L-fucosidase of human sperm. Mol. Reprod. Dev. 74: 758-766.
- Verhage, H. G., M. L. Bareither, R. C. Jaffe, M. Akbar (1979).** Cyclic changes in ciliation, secretion and cell height of oviductal epithelium in women. Am. J. Anat. 156: 505-521.
- Verhage, H. G., A. T. Fazleabas (1988).** The in vitro synthesis of estrogen-dependent proteins by the baboon (*Papio anubis*) oviduct. Endocrinol. 123: 552-558.
- Verhage, H. G., A. T. Fazleabas, K. Donnell (1988).** The in vitro synthesis and release of proteins by human oviduct. Endocrinology. 123: 2451-2456.
- Verhage, H. G., M. L. Boice, P. Mavrogiannis, A. T. Fazleabas (1989).** Immunological characterization and immunocytochemical localization of oviduct-specific glycoproteins in the baboon (*Papio anubis*). Endocrinol. 124: 2464-2472.

**Verpoorte, J. A (1972).** Purification of two N-acetyl-D-glucosaminidases from beef soleen. *J. Biol. Chem.* 247: 4787-4793.

**Vishwakarma, P. (1962).** The pH and bicarbonate-ion content of the oviduct and uterine fluids. *Fertil. Steril.* 13: 481-485.

**Waberski, D., F. Magnus, F. Ardón, A. M. Petrunkina, K. F. Weitze, E. Töpfer-Petersen (2006).** Binding of boar spermatozoa to oviducal epithelium in vitro in relation to sperm morphology and storage time. *Reprod.* 131(2): 311-318.

**Wagh, P. V., J. Lippes (1989).** Human oviductal fluid proteins III. Identification and partial purification. *Fertil. Steril.* 51: 81-88.

**Wagner, A., M. Ekhlasi-Hundrieser, C. Hettel, A. Petrunkina, D. Waberski, M. Nimtz, E. Töpfer-Petersen (2002).** Carbohydrate-based interactions of oviductal sperm reservoir formation-studies in the pig. *Mol. Reprod. Dev.* 61: 249-257.

**Walker, S. K., J. L. Hill, D. O. Kleeman, C. D. Nancarrow (1996).** Development of ovine embryos in synthetic oviductal fluid containing amino acids at oviductal concentrations. *Biol. Reprod.* 55: 703-708.

**Walter, I., S. Bavdek (1997).** Cectin binding patterns of porcine oviduct mucosa and endomerium during theoestrous cycle. *J. Anat.* 190: 299-307.

**Warnes, G. M., F. Amato, R. F. Seemark (1978).** Prostaglandin F in the fallopian tube secretion of the ewe. *Aust. J. Biol. Sci.* 31: 275-285.

**Wassarman, P. M (1988).** The mammalian ovum. In: Knobil E, Neil JD. *The Physiology of Reproduction*. New York: Raven Press. 69-101.

**Wassarman, P. M (1990).** Profile of a mammalian sperm receptor. *Development.* 108: 1-17.

**Wassarman, P. M (1999).** Mammalian fertilization: molecular aspects of gamete adhesion, exocytosis and fusion. *Cell.* 96: 175-183.

**Wassarman, P. M., J. Chen, N. Cohen, E.S. Litscher, C Liu, Z. Williams (1999).** Structure and function of the mammalian egg zona pellucida. *J. Exp. Zool.* 285: 251-258.

**Wassarman, P. M., L. Jovine, E.S. Litscher (2004).** Mouse zona pellucida genes and glycoproteins. *Cytogenet. Genome Res.* 105(2-4): 228-234.

**Watson, A.J., P.H. Watson, M. Arcella-Panlilio, D. Warnes, S. K. Walker, G. A. Schultz, D. T. Armstrong, R. F. Seemark (1994).** A growth factor phenotype map for ovine preimplantation development. *Biol. Reprod.* 50: 725-733.

- Way, A. L., A. M. Schuler, G. J. Killian (1994).** Influence of bovine ampullary and isthmic oviductal fluid on sperm-egg binding and fertilization in vitro. *J. reprod. Fertil.* 109: 95-101.
- Wegner, C. C., G. J. Killian (1991).** In vitro and in vivo association of an oviduct estrous-associated protein with bovine zona pellucida. *Mol. Reprod. Dev.* 29: 77-84.
- West, N. B., R. M. Brenner (1985).** Progesterone-mediated suppression of estradiol receptors in cynomolgus macaque cervix, endometrium and oviduct during sequential estradiol-progesterone treatment. *J. Steroid Biochem.* 22(1): 29-37.
- White, I. G., J. C. Wallace, G. M. Stone (1963).** Studies of the glycerophosphorylcholine diesterase activity of the female genital tract in the ewe, cow, sow, and rat. *J. Reprod. Fertil.* 5: 298 (Abstract).
- White, I. G., J. C. Wallace, G. M. Stone (1964).** The metabolism of seminal glycerophosphorylcholine by fluids of the female reproductive tract. In: Proceedings of the Fifth International Congress on Animal Reproduction. Trento. 4: 526-560.
- Williams, G. I., M. Amstalden, M. R. Gracia, R. L. Satanko, S. E. Nizielski, C. D. Morrison, D. H. Keisler (2002).** Leptin and its role and the central regulation of reproduction in cattle. *Dom. Anim. Endocrinol.* 23: 339-343.
- Willis, P., K. N. Sekhar, P. Brooks, R. A. Fayerer-Hosken (1994).** Electrophoretic characterization of equine oviductal fluid. *J. Exp. Zool.* 268: 477-485.
- Winger, Q. A., P. de los Rios, V. K. Han, D. T. Armstrong, D. J. Hill, A. J. Watson (1997).** Bovine oviductal and embryonic insulin-like growth factor binding proteins: possible regulators of "embryotrophic" insulin-like growth factor circuits. *Biol. Reprod.* 56: 1415-1423.
- von Witzendorff, D., M. Ekhlaei-Hundrieser, Z. Dostalova, M. Resch, D. Rath, H. W. Michelmann, E. Töpfer-Petersen (2005).** Analysis of N-linked glycan of porcine zona pellucida glycoprotein ZPA by Maldi-ToF MS: a contribution to understanding zona pellucida structure. *Glycobiology.* 15(5): 475-488.
- Wiseman, D. L., D. M. Henricks, D. M. Eberhardt, W. C. Bridges (1992).** Identification and content of insulin-like growth factors in porcine oviductal fluid. *Biol. Reprod.* 47: 1216-132.
- Wolf, D. P. (1982).** The ovum before and after fertilization. In Zanveld LDJ, Chatterton RT E (eds). *Biochemistry of Mammalian Reproduction.* New York: John Wiley and Sons. pp: 231-259.
- Wolgemuth, D. J., J. Celeza, D. S. Bundman, B. D. Dunbar (1984).** Formation of the rabbit zona pellucida and its relationship to ovarian follicular development. *Dev. Biol.* 1406:1-14.

- Wollemhaupt, K., U. Tiemann, R. Einspanier, F. Schnider, W. kanitz, K. P. Brussow (1997).** Characterization of epidermal growth factor receptor in pig oviduct and endometrium. *J. Reprod. Fertil.* 111: 173-181.
- Xia, P., V. K. Han, D. T. Armstrong, A. J. Watson (1996).** Expression of insulin-like growth factors in two bovine oviductal cultures employed for embryo co-culture. *J. Endocrinol.* 149: 41-53.
- Xu, C., D. R. Rigney, D. J. Anderson (1994).** Two-dimensional electrophoretic profile of human sperm membrane proteins. *J. Androl.* 15: 595-602.
- Yahia Khandoker, M. A. M., H. Tsujii, D. Karasawa (1997).** Fatty acid composition of oocytes, follicular, oviductal and uterine fluids of pig and cow. *Asian-Australian J. Anim. Sci.* 10: 523-527.
- Yanagimachi, R (1988).** Mammalian fertilization. In: Knobil E, Neil JD. *The Physiology of Reproduction*. New York: Raven Press. 135-184.
- Yanagimachi, R (1994).** Mammalian fertilization. In: Knobil E, Neil JD. *The Physiology of Reproduction*. New York: Raven Press. 1: 189-317.
- Yeh, A. K. , D. R. Tulsiani, R. Carubelli (1971).** Neuraminidase activity in human leucocytes. *J. Lab. Clin. Med.* 78: 771-778.
- Yonezawa, N., N. Fukui, K. kudo, M. Nakano (1999).** Localization of neutral N-linked carbohydrate chains in pig zona pellucida glycoprotein ZPC. *Eur. J. Biochem.* 260: 57-63.
- Yonezawa, N., N. Fukui, M. Kuno, M. Shinoda, S. Goko, S. Mitsiu, M. Nakano (2001).** Molecular cloning of bovine zona pellucida glycoproteins ZPA and ZPB and analysis of the sperm-binding components of the zona. *Eur. J. Biochem.* 268: 86-92.
- Yonezawa, N., S. Amari, K. Takahashi, K. Ikea, F. L. Kanai, K. Kikuchi, M. Nakano (2005).** Participation of the nonreducing terminal beta-galactosyl residues of neutral N-linked carbohydrate chains of porcine zona pellucida glycoproteins in sperm-egg binding. *Mol. Reprod. Dev.* 70: 222-227.
- Yoshida, K., T. Takahashi, Y. Nakame, H. Saito, K. Kihara (1987).** N-acetyl-beta-D-glucosaminidase (NAG) activity in human semen: its relation to gamma-glytamyl transpeptidase (gamma-GTP) activity in seminal plasma and reproductive tissues, and relation between seminal mucoprotein concentration and seminal NAG, and gamma-GTP activities. *Hinyokika Ki yo.* 33: 1054-1059.
- Yurewicz, E. C., B. A. Pack, A. G. Sacco (1991).** Isolation, composition, and biological activity of sugar chains of porcine oocyte zona pellucida 55k glycoprotein. *Mol. Reprod. Dev.* 30: 126-134.

**Yurewicz, E. C., B. A. Pack, D. R. Armant, A. G. Sacco (1993).** Porcine zona pellucida ZP3 $\alpha$  glycoprotein mediates binding of the biotin-labeled M<sub>r</sub> family (ZP3) to boar sperm membrane vesicles. Mol. Reprod. Dev. 36: 382-389.

**Yurewicz, E. C., A. G. Sacco, S. K. Gupta, N. Xu, D. A. Gage (1998).** Hetero-oligomerization-dependent binding of pig oocytes glycoproteins ZPB and ZPC to boar sperm membrane vesicles. J. Biol. Chem. 273: 7488-7494.

**Zanaveld, L. D. J., K. L. Polakoski, G. F. B. Schumacher (1973).** Properties of acrosomal hyaluronidase from bull spermatozoa. J. Biol. Chem. 248: 564-570.

**Zhao, Y., P. J. P. Chauvet, S. L. Alper, J. M. Baltz (1995).** Expression and function of bicarbonate/chloride exchangers in the preimplantation embryo. J. Biol. Chem. 270: 24428-24434.

**Zhuo, L., K. Kimata (2001).** Cumulus oophorus extracellular matrix: its construction and regulation. Cell Struct. Funct. 26(4). 189-196.

**Zita, K., E. Wertheimer, P. V. Miranda (2006).** Sperm N-acetylglucosaminidase is involved in primary binding to the zona pellucida. Mol. Hum. Reprod. 12: 557-563.