

## LITERATURE CITED

- Adan, R.A., J.J. Cox, T.V. Beischlag, J.P. Burbach. 1993. A composite hormone response element mediates the transactivation of the rat oxytocin gene by different classes of nuclear hormone receptors. *Mol. Endocrinol.* 7:47.
- Adan, R.A., N. Walther, J.J. Cox, R. Ivell, and J.P. Burbach. 1991. Comparison of the estrogen responsiveness of the rat and bovine oxytocin gene promoters. *Biochem. Biophys. Res. Commun.* 175:117.
- Amoscato, A.A., A.M. Brumfield, S.B. Sansoni, R.B. Herberman, and A. Chambers. 1991. Natural killer cell cytotoxic granule-associated enzymes. I. Purification, characterization, and analysis of function of an enzyme with sulfatase activity. *J. Immunol.* 147:950.
- Arthur, G.H., D.E. Noakes, and H. Pearson. 1989. *Veterinary Reproduction and Obstetrics*. 6<sup>th</sup> ed. Bailliere Tindall, Philadelphia, PA.
- Atkinson, E.A., J.M. Gerrard, G.E. Hildes, and A.H. Greenberg. 1990. Studies of the mechanism of natural killer (NK) degranulation cytotoxicity. *J. Leukoc. Biol.* 47:39.
- Baird, D.T. and R.J. Scaramuzzi. 1976. Changes in the secretion of ovarian steroids and pituitary luteinizing hormone in the peri-ovulatory period in the ewe: the effect of progesterone. *J. Endocrinology.* 70:237.
- Balasure, A.K., I.C. Caicedo, K. Kawada, D.S. Watt, C.E. Rexroad, and T.A. Fitz. 1989. Multiple classes of prostaglandin F<sub>2</sub> alpha binding sites in subpopulations of ovine luteal cells. *Biol. Reprod.* 41:385.
- Bale, T.L., and D.M. Dorsa. 1997. Cloning, novel promoter sequence, and estrogen regulation of a rat oxytocin receptor gene. *Endocrinology.* 138:1151.
- Bartlett, P.C., J.H. Kirk, M.A. Wilke, J.B. Kaneene, and E.C. Mather. 1986. Metritis complex in Michigan-Friesian cattle: incidence, descriptive epidemiology and estimated economic impact. *Prev. Vet. Med.* 4:235.
- Beard, A.P., and G.E. Lamming. 1994. Oestradiol concentration and the development of the uterine oxytocin induced PGF<sub>2</sub> alpha release in ewes. *J. Reprod. Fertil.* 100:469.
- Benoit, A.M., and R.A. Daily. 1991. Catheterization of the caudal vena cava via lateral saphenous vein in the ewe, cow, and gilt: an alternative to uteroovarian and medial coocycgeal vein catheters. *J. Anim. Sci.* 69:2971.
- Benyo, D.F., and J.L. Pate. 1992. Tumor necrosis factor-alpha alters bovine luteal cell synthetic capacity and viability. *Endocrinology.* 130:854.

Bergmann, L., E. Weidmann, B. Bungert, P. Hechler, and P.S. Mitrou. 1990. Influence of various cytokines on the induction of lymphokine activated killer cells. *Nat. Immun. Cell Growth Regul.* 9:265.

Berridge, M.J., and R.F. Irvine. 1984. Inositol triphosphate, a novel second messenger in cellular signal transduction. *Nature.* 312:315.

Bishop, G.A., S.D. Marlin, S.A. Schwartz, and J.C. Glorioso. 1984. Human natural killer cell recognition of herpes simplex virus type 1. Glycoproteins: Specificity analysis with the use of monoclonal antibodies. *J. Immunol.* 133:2206.

Black, W.G., J. Simon, S.H. McNutt, and L.E. Cassida. 1953. Investigations on the physiological basis for the differential response of estrous and pseudopregnant rabbit uteri to induced infection. *Am. J. Vet. Res.* 14:318.

Black, W.G., L.C. Ulberg, H.E. Kidder, J. Simon, S.H. McNutt, and L.E. Cassida. 1953b. Inflammatory response of the bovine endometrium. *Am. J. Vet. Res.* 14:179.

Bloom, E.T. and J.T. Babbitt. 1990. Prostaglandin E<sub>2</sub>, monocyte adherence and interleukin-1 in the regulation of human natural killer cell activity by monocytes. *Nat. Immun. Cell Growth Regul.* 9:36.

Boie, Y., N. Sawyer, D.M. Slipetz, K.M. Metters, and M. Abramovitz. 1995. Molecular cloning and characterization of the human prostanoid DP receptor. *J. Biol. Chem.* 270:18910.

Bomalaski, J.S., D. Dundee, L. Brophy, and M.A. Clarke. 1990. Leukotriene B<sub>4</sub> modulates phospholipid metabolism in human polymorphonuclear leukocytes. *J. Leuk. Biol.* 47:1.

Borras, M. L. Hardy, F. Lempereur, A.H. elKhissin, N. Legros, R. Gol-Winkler, and G. Leclercq. 1994. Estradiol induced down regulation of estrogen receptors. Effects of various modulators of protein synthesis and expression. *J. Steroid. Biochem. Mol. Biol.* 48:325.

Boskey, E.R., K.M. Telsch, K.J. Whaley, T.R. Moench, and R.A. Cone. 1999 Acid production by vaginal flora in vitro is consistent with the degree and extent of vaginal acidification. 67:517.

Braden, T.D., F. Gamboni, and G.D. Niswender. 1988. Effects of prostaglandin F<sub>2</sub>α-induced luteolysis on populations of cells in the ovine corpus luteum. *Biol. Reprod.* 39:245.

Bretzlaff, K. 1987. Rationale for treatment of endometritis in the dairy cow. *Vet. Clin. North Am. Food. Anim. Pract.* 3:593.

Brown, C.C., H.L. Malech, R.J. Jacobson, C.F. Shrimpton, P.C. Beverly, A.W. Segal, and J.I. Gallin. 1991. Unique human neutrophil populations are defined by monoclonal antibody ED12F8C10. *Cell. Immunology.* 132:103.

Burgess, K.M., M.M. Ralph, G. Jenkin, and G.D. Thorburn. 1990. Effect of oxytocin and estradiol on uterine prostaglandin release in nonpregnant and early pregnant ewes. *Biol. Reprod.* 42:822.

Burrells, C., and P.W. Wells. 1977. In vitro stimulation of ovine lymphocytes by various mitogens. *Res. Vet. Sci.* 23:84.

Caraty, A., N.P. Evans, C.J. Fabre-Nys, and E.J. Karsch. 1995. The preovulatory gonadotrophin-releasing hormone surge: a neuroendocrine signal for ovulation. 49:245.

Chami, O., A. Megevand, T. Ott, F. Bazer, and C. Neill. 1999. Platelet-activating factor may act as an endogenous pulse generator for sheep of luteolytic PGF<sub>2</sub>alpha release. *Am. J. Physiol.* 276:E783.

Cherny, R.A., L.A. Salamonsen, and J.K. Findlay. 1991. Immunocytochemical localization of oestrogen receptors in the endometrium of the ewe. *Reprod. Fertil. Dev.* 3:321.

Coelho, M.M., I.R. Pela, and N.J. Rothwell. 1993. Dexamethasone inhibits the pyrogenic activity of prostaglandin F<sub>2</sub> alpha, but not prostaglandin E<sub>2</sub>. *Eur. J. Pharmacol.* 238:391.

Coleman, D.A., W.V. Thayne, and R.A. Dailey. 1985. Factors affecting reproductive performance of dairy cows. *J. Dairy Sci.* 68:1793.

Crocker, K. P. and J. N. Shelton. 1973. Influence of stage of cycle, progestagen treatment and dose of oestrogen on uterine motility in the ewe. *J. Reprod. Fertil.* 32:521.

Curtis, C.R., H.N. Erb, C.J. Sniffen, R.D. Smith, and D.S. Kronfeld. 1985. Path analysis of dry period nutrition, postpartum metabolic and reproductive disorders, mastitis in Holstein cows. *J. Dairy Sci.* 68:2347.

Del Vecchio, R.P., D.J. Matsas, S. Fortin, D.P. Sponenberg, and G.S. Lewis. 1994. Spontaneous uterine infections are associated with elevated prostaglandin F<sub>2</sub> metabolite concentrations in postpartum dairy cows. *Theriogenology.* 41:413.

Diehl, J.R. and B.N. Day. 1974. Effect of prostaglandin F<sub>2</sub> alpha on luteal function in swine. *J. Anim. Sci.* 39:392.

Douglas, R.H. and O.J. Ginther. 1973. Luteolysis following a single injection of PGF<sub>2</sub>a in sheep. *J. Anim. Sci.* 37:990.

Draincourt, M.A. 1991. Follicular dynamics in sheep and cattle. *Theriogenology.* 35:55.

Dubois, C., E. Bissonnette, and M. Rola-Pleszczynski. 1989. Platelet-activating factor (PAF) stimulates tumor necrosis factor production by alveolar macrophages: Prevention by receptor antagonists and lipoxygenase inhibitors. *J. Immunol.* 143:964.

Eiler, H. and M. Sims. 1979. Mastitis-metritis-agalctia complex in sows: effect of the dosage of oxytocin on intramammary pressure in lactating healthy sows. *Am. J. Vet. Res.* 40:1100.

Einarsson, S., B. Gustafsson, and K. Larsson. 1975. Prostaglandin induced parturition in swine with some aspects of prevention of MMA syndrome. *Nord. Vet. Med.* 27:429.

Erb, H.N., R.D. Smith, R.B. Hillman, P.A. Powers, and M.C. Smith. 1984. Rates of diagnosis of six diseases of Holstein cows during 15-d and 21-d intervals. *Am. J. Vet. Res.* 45:333.

Estill, C.T., J.H. Britt, and J.E. Gadsby. 1993. Repeated administration of prostaglandin F<sub>2</sub> alpha during the early luteal phase causes premature luteolysis in the pig. *Biol. Reprod.* 49:181.

Etherington, W.G. M.L. Kinsel, and W.E. Marsh. 1995. Options in dairy data management. *Can. Vet. J.* 36:28.

Fairclough, R.J., L.G. Moore, L.T. McGowan, A.J. Peterson, J.F. Smith, H.R. Tervit, and W.B. Watkins. 1980. Temporal relationship between plasma concentrations of 13,14-dihydro-15-keto-prostaglandin F and neurophysin I/II around luteolysis in sheep. *Prostaglandins.* 20:199.

Fearon, D.T. 1997. Seeking wisdom in innate immunity. *Nature.* 388:323.

Fedyk, E.R., and R.P. Phipps. 1996. Prostaglandin E<sub>2</sub> receptors of the EP<sub>2</sub> and EP<sub>4</sub> subtypes regulate activation and differentiation of mouse B lymphocytes to IgE-secreting cells. *Proc. Natl. Acad. Sci.* 93:10978.

Findlay, J.K., I.J. Clarke, J. Swaney, N. Colvin, and B. Doughton. 1982. Oestrogen receptors and protein synthesis in caruncular and intercaruncular endometrium of sheep before implantation. *J. Reprod. Fertil.* 64:329.

Flint, A.P.F. and E.L. Sheldrick. 1985. Continuous infusion of oxytocin prevents induction of uterine oxytocin receptor and blocks luteal regression in cyclic ewes. *J. of Reprod. and Fertil.* 75:623.

Flint, A.P.F., E.L. Sheldrick, T.J. McCann, and D.S.C. Jones. 1990. Luteal oxytocin: characteristics and control of synchronous episodes of oxytocin and PGF<sub>2</sub>alpha secretion at luteolysis in ruminants. *Domestic Animal Endocrinology.* 7:111.

Fonseca, F.A., J.H. Britt, B.T. McDaniel, J.C. Wilk, and A.H. 1983. Reproductive traits of Holsteins and Jerseys. Effects of age, milk yield, and clinical abnormalities on involution of cervix and uterine involution, estrous cycles, detection of estrus, conception, and days open. *J. Dairy Sci.* 66:1128.

Fortin, S., B.L. Sayre, and G.S. Lewis. 1994. Does exogenous progestogen alter the relationships among PGF<sub>2</sub>, 13,14,-dihydro-15-keto-PGF<sub>2</sub>, progesterone, and estrogens in ovarian intact ewes around the time of luteolysis? *Prostaglandins.* 47:171.

- Fuquay, J.W., R.A. Harris, W.H. McGee, J.F. Beatty, and B.L. Arnold. 1975. Routine postpartum treatment of dairy cattle with intrauterine neomycin sulfate boluses. *J. Dairy Sci.* 58:1367.
- Gadsby, J.E., A.K. Balapure, J.H. Britt, and T.A. Fitz. 1990. Prostaglandin F<sub>2</sub> alpha receptors on enzyme-dissociated pig luteal cells throughout the estrous cycle. *Endocrinology.* 126:787.
- Gilbert, R.O., and W.S. Schwark. 1992. Pharmacological considerations in the management of peripartum conditions in the cow. *Vet. Clin. North Am. Food Anim. Pract.* 8:29.
- Golemboski, K.A., S.E. Bloom., and R.R. Dietert. 1990. Dynamics of avain inflammatory respnse to cross-linked dextran: Changes in avain blood leukocyte populations. *Inflammation.* 14:31.
- Gomez-Cambronero, J., E. Wang, G. Johnson, C.K. Huang, and R.I. Shaafi. 1991. Platelet-activation factor induces tyrosine phosphorylation in human neutrophils. *J. Biol. Chem.* 266:6240.
- Griffen, J.F.T., P.J. Hatigan and W.R. Nunn. 1974. Nonspecific uterine infection and bovine fertility. I. Infection patterns and endometritis during the first seven weeks postpartum. *Theriogenology.* 1:91.
- Guthrie, H.D., and C. Polge. 1976. Luteal function and oestrus in gilts treated with a synthetic analogue of prostaglandin F-2 alpha at various times during the estrous cycle. *J. Reprod. Fertil.* 48:423.
- Haller, O. and H. Wigzell. 1979. Suppression of natural killer cell activity with radioactive strontium: effector cells are marrow dependent. *J. Immunol.* 118:1503.
- Hallford, D.M., R.P. Wetterman, E.J. Turman, and I.T. Omtvedt. 1975. Luteal function in gilts after prostaglandin F<sub>2</sub>alpha. *J. Anim. Sci.* 41:1706.
- Hansel, W., P.W. Concannon, and J.H. Lukaszewska. 1973. Corpora lutea of large domestic animals. *Biology of Reproduction* 8:222.
- Hansen, B.D. and D.S. Finebloom. 1990. Characterization of the interaction between recombinant human interferon- and its receptor on human polymorphonuclear leukocytes. *J. Leuk. Biol.* 47:64.
- Hasumoto, K., Y. Sugimoto, M. Gotoh, E. Segi, A. Yamasaki, M. Yamaguchi, H. Honda, H. Hirai, M. Negishi, A. Kakizuka, and A. Ichikawa. 1997. Characterization of the mouse prostaglandin F receptor gene: a transgenic mouse study of a regulatory region that controls its expression in the stomach and kidney but not in the ovary. *Genes Cells.* 2:571.

- Hatjiminaoglou, P.I., T. Alifakiotis, T. and, N. Zervas. 1979. The effect of exogenous oxytocin on estrous cycle length and corpus luteum lysis in ewes. *Ann. Biol. Anim. Biochim. Biophys.* 19:355.
- Hawk, H.W., G.D. Turner, and J.F. Sykes. 1961. Variation in the inflammatory response and bactericidal activity of the sheep uterus during the estrous cycle. *Am. J. Vet. Res.* 22:689.
- Hixon, J.E. and A.P.F. Flint. 1987. Effects of a luteolytic dose of oestradiol benzoate on uterine oxytocin receptor concentrations, phosphoinositide turnover and prostaglandin F<sub>2</sub> secretion in sheep. *J. Reprod. Fertil.* 79:457.
- Homanics, G.E. and W.J. Silvia. 1988. Effects of progesterone and estradiol-17 $\beta$  on uterine secretion of prostaglandin F<sub>2</sub> in response to oxytocin in ovariectomized ewes. *Biol. Reprod.* 38:804.
- Honda, A., Y. Sugimoto, T. Namba, A. Watabe, A. Irie, M. Negishi, S. Narumiya, and A. Ichikawa. 1993. Cloning and expression of a cDNA for mouse prostaglandin E receptor EP2 subtype. *J. Biol. Chem.* 7759.
- Hussain, A.M. 1989. Bovine uterine defense mechanisms: a review. *J. Vet. Med. Ser. B* 36:641.
- Hussain, A.M., and R.C.W. Daniel. 1991. Bovine endometritis: current and future alternative therapy. *J. Vet. Med. Ser. A* 38:641.
- Ignaro, L.J. 1990. Biosynthesis and metabolism of endothelial-derived nitric oxid. *Annu. Rev. Pharmacol. Toxicol.* 30:535.
- Ing, N.H., T.E. Spencer, and F.W. Bazer. 1996. Estrogen enhances endometrial estrogen receptor gene expression by a postranscriptional mechanism in the ovariectomized ewe. *Biol. Reprod.* 54:591.
- Inskeep, E.K., W.J. Smutney, R.L. Butcher, and J.E. Pexton. 1975. Effects of intrafollicular injections on prostaglandins in nonpregnant and pregnant ewes. *J. Anim. Sci.* 41:1098.
- Kastner, P. A. Krust, B. Turcotte, U. Stropp, L. Tora, H. Gronemeyer, P. Chambon. 1990. Two distinct estrogen-regulated promoters generate transcripts encoding the functionally different human progesterone receptor forms A and B. *Embo. J.* 9:1603.
- Katsuyama, M., R. Ikegami, H. Karahashi, F. Amano, Y. Sugimoto, and A. Ichikawa. 1998. Characterization of the LPS-stimulated expression of EP2 and EP4 prostaglandin E receptors in mouse macrophage-like cell line, J774.1. *Biochem. Biophys. Res. Commun.* 29:251.
- Katsuyama, M., Y. Sugimoto, K. Morimoto, K. Hasumoto, M. Fukumoto, M. Negishi, and A. Ichikawa. 1997. Distinct cellular localization of the messenger ribonucleic acid for prostaglandin E receptor subtypes in the mouse uterus during pseudopregnancy. 138:344.

Kawase, I., D.L. Urdal, C.G. Brooks, and C.S. Henney. 1982. Selective depletion of NK cell activity in vivo and its effect on NK-sensitive and NK-resistant tumor cell variants. *Int. J. Cancer.* 29:567.

Khalifa, R.M.E., B.L. Sayre, and G.S. Lewis. 1992. Exogenous oxytocin dilates the cervix in ewes. *J. Anim. Sci.* 70:38.

Kishimoto, T.K., M.A. Julia, E.L. Berg, and E.C. Butcher. 1989. Neutrophil Mac-1 and MEL-14 adhesion proteins are inversely regulated by chemotactic factors. *Science.* 245:1238.

Korchak, H.M., K. Vienne, L.E. Rutherford, and G. Weissman. 1984. Neutrophil stimulation: receptor, membrane and metabolic events. *Fed. Proc.* 43:2749.

Kraus, W.L., M.M. Montano, and B.S. Katzenellenbogen. 1994. Identification of multiple widely spaced estrogen-responsive regions in the rat progesterone receptor gene. *Mol. Endocrinology.* 8:952.

Kriesle, R.A., and C.W. Parker. 1983. Specific binding of leukotriene B<sub>4</sub> to a receptor on human polymorphonuclear leukocytes. *J. Exp. Med.* 157:628.

Kunkel, S.L., M. Spengler, M.A. May, R. Spengler, J. Larrick, and D. Remmick. 1988. Prostaglandin E<sub>2</sub> regulates macrophage-derived tumor necrosis factor gene expression. *J. Biol. Chem.* 263:5380.

Lacey, R.W. and V.L. Lord. 1981. Sensitivity of staphylococci to fatty acids: a novel inactivation of linolenic acid by serum. *J. Med. Microbiol.* 14:41.

Lander Chacin, M.F., P.J. Hansen, and M. Drost. 1990. Effects of stage of the estrous cycle and steroid treatment on uterine immunoglobulin content and polymorphonuclear leukocytes in cattle. *Theriogenology.* 34:1169.

Lands, W.E. 1979. The biosynthesis and metabolism of prostaglandins. *Annu. Rev. Physiol.* 41:633.

Levy, S.B. 1998. Multidrug resistance—a sign of the times. *N. Eng. J. Med.* 338:1376.

Lewis, G.S. 1997. Symposium: Health Problems of the Postpartum Cow. Uterine health and disorders. *J. of Dairy Sci.* 80:984.

Lewis, G.S., P.E. Jenkins, R.L. Fogwell, and E.K. Inskeep. 1978. Concentration of prostaglandins E<sub>2</sub> and F<sub>2a</sub> and their relationship to luteal function in early pregnant ewes. *J. Anim. Sci.* 47:1314.

Lewis, G.S., W.W. Thatcher, E.L. Bliss, M. Drost, and R.J. Collier. 1984. Effects of heat stress during pregnancy on postpartum reproductive changes in Holstein cows. *J. Dairy Sci.* 58:174.

Lewis, R.A., N.A. Soter, P.T. Diamond, K.F. Austen, J.A. Oates, and L.J. Roberts. 1982. Prostaglandin D2 generation after activation of rat and human mast cells with IgE. *J. Immunol.* 129:1627.

Ley, K., P. Gaehtgens, C. Fennie, M.S. Singer, L.A. Lasky, and R.D. Rosen. 1991. Lectin-like cell adhesion molecule 1 mediates leukocyte rolling in murine venules in vivo. *Blood.* 77: 2553.

Lin, J.H., and M.T. Lin, 1996. Nitric oxide synthase-cyclo-oxygenase pathways in organum vasculosum laminae terminalis: possible role in pyrogenic fever in rabbits. *Br. J. Pharmacol.* 118:179.

Liu, C.C., B. Perussia, Z.A. Cohn, and J.D. Young. 1986. Identification and characterization of a pore-forming protein in human peripheral blood natural killer cells. *J. Exp. Med.* 164:2061.

Lomas, D.A., M. Ip, A. Chamba, and P.A. Stockly. 1991. The effect of in vitro and in vivo dexametasone on human neutrophil function. *Agents Action.* 33:279.

Lotzova, E. and E.W. Ades. 1989. Natural killer cell: definition, heterogeneity, lytic mechanism, functions, and clinical applications. *Highlights of the Fifth International Workshop on Natural Killer Cells.* Hilton Head Island, N.C.

Loucks, M.E., J.L. Morrill, and A.D. Dayton. 1985. Effect of prepartum vaccination with K99 *Escherichia coli* vaccine on maternal and calf blood antibody concentration and calf health. *J. Dairy Sci.* 68:1841.

Mamluk, R., D. Chen, Y. Greber, J.S. Davis, and R. Meidan. 1998. Characterization of messenger ribonucleic acid expression for prostaglandin F2 alpha and luteinizing hormone receptors in various bovine luteal cell types. 58:849.

Mann, G.E., A.S. McNeilly, and D.T. Baird. 1992. Hormone production in vivo and in vitro from follicles at different stages of the oestrous cycle in sheep. *J. Endocrinology.* 132:225.

Markusfeld, O. 1987. Periparturient traits in seven high dairy herds. Incidence rate association with parity, and interrelationships among traits. *J. Dairy Sci.* 70:158.

McConkey, D.J., S. Orrenius, and M. Jondal. 1990. Agents that elevate cAMP stimulate DNA fragmentation in thymocytes. *J. Immunol.* 145:1227.

McCracken, J.A., E.E. Custer, and J.C. Lasma. 1999. Luteolysis: neuroendocrine-mediated event. *Physiol. Rev.* 79:263.

McCracken, J.A., M.E. Glew, and R.J. Scaramuzzi. 1970. Corpus luteum regression induced by prostaglandin F2a. *J. Clin. Endocrinol. Metab.* 30:544.



McCracken, J.A., W. Schramm, W. Barcilowski, and L. Wilson. 1981. The identification of prostaglandin F<sub>2</sub> alpha as a uterine luteolytic hormone and the hormonal control of its synthesis. *Acta veterinaria scandinavica*. 77:71.

McNatty, K.P., K.J. Revesheim, and A. Young. 1973. Peripheral plasma progesterone concentrations in sheep during the oestrous cycle. *J. Endocrinol.* 58:219.

Medawar, P.B. 1953. Symposium for the Society of Experimental Biology. 7:320.

Miller, B.G., and N.W. Moore. 1976. Effects of progesterone and estradiol on RNA and protein metabolism in the genital tract and on survival of embryos in the ovariectomized ewe. *Aust. J. Biol. Sci.* 29:565.

Miller, R.F. 2000. Clinical presentation and significance of emerging opportunistic infections. *J. Eukaryot. Microbiol.* 47:1:21.

Milton, A.S. and S. Wendlandt. 1970. A possible role for prostaglandin E<sub>1</sub> as a modulator for temperature regulation in the central nervous system of the cat. 207:76.

Milvae, R.A., R.T. Duby, J.P. Tritschler, R.F. Pekala, G.G. Gnatek, S.L. Bushmich, and D.T. 1991 Schreiber. Function and lifespan of corpora lutea in ewes treated with exogenous oxytocin. *J. Reprod. Fertil.* 92:133.

Mitchell, M.D., A.P.F. Flint and A.C. Turnbull. 1975. Stimulation by oxytocin of prostaglandin F levels in uterine venous effluent in pregnant and puerperal. *Prostaglandins* 9:47-54.

Miwa, A., M. Ui, and N. Kawai. 1990. G protein is coupled to presynaptic glutamate and GABA receptors in lobster neuromuscular synapse. *J. Neurophysiol.* 63:173.

Morimoto, A., T. Nakamori, T. Watanabe, T. Ono, and N. Murakami. 1988. Pattern differences in experimental fevers induced by endotoxin, endogenous pyrogen, and prostaglandins. *Am. J. Physiol.* 254:R633.

Morrison, C.J., E. Brummer, R.A. Isenberg, and D.A. Stevens. 1987. Activation of murine polymorphonuclear neutrophils for fungicidal activity by recombinant interferon- $\gamma$ . *J. Leuk. Biol.*41:434.

Naaktgeboren, C., G. C. van der Weyden, P. J. Klopper, C. H. Kroon, A. G. Schoof, and M. A. M. Taverne. 1973. Electrophysiological observations of uterine motility during the oestrous cycle in sheep. *J. Reprod. Fertil.* 35:511.

Nardulli, A.M., and B.S. Katzellenhogen. 1986 Dynamics of estrogen receptor turnover in uterine cells in vitro and uteri in vivo. *Endocrinology.* 119:2038.

Narumiya, S. Y. Sugimoto, and F. Ushikubi. 1999. Prostanoid receptors: structures, properties, and functions. *Physiol. Rev.* 79:1193.

- Nothnick, W.B., and J.L. Pate. 1990. Interleukin-1 beta is a potent stimulator of prostaglandin synthesis in bovine luteal cells. *Biol. Reprod.* 43:898.
- O'shea, J.D., m.G. Nightingale, and W.A. Chamley. 1977. Changes in small blood vessels during cyclical luteal regression in sheep. *Biol. Reprod.* 17:162.
- Oida, S., H. Miyazaki, T. Iimura, M. Suzuki, S. Sasaki, and H. Shimokawa. 1996. *DNA Seq.* 6:307.
- Ojeda, S.R., and W.B. Campbell. 1982. An increase in hypothalamic capacity to synthesize prostaglandin E2 precedes the first preovulatory surge of gonadotropins. *Endocrinology.* 11:1031.
- Okuda, K., A. Miyamoto, H. Sauerwein, F.J. Schweigert, and D. Schams. 1992. Evidence for oxytocin receptors in cultured bovine luteal cells. *Biol. Reprod.* 46:1001.
- Olson, J.D., K.N. Bretzlaff, R.G. Mortimer, and L. Ball. 1986. *The Metritis-Pyometra Complex in Current Therapy in Theriogenology 2: Diagnosis, Treatment and Prevention of Reproductive Diseases in Small and Large animals.* W.B. Saunders Co., Philadelphia, PA.
- Ott, T.L., Y. Zhou, M.A. Mirando, C. Stevens, J.P. Harney, T.F. Ogle, and F.W. Bazer. 1993. Changes in progesterone and oestrogen receptor mRNA and protein during maternal recognition of pregnancy and luteolysis in ewes. *J. Mol. Endocrinol.* 10:171.
- Paisley, L.G., W.D. Mickelsen, and P.B. Anderson. 1986. Mechanisms and therapy for retained fetal membranes and uterine infections of cows: a review. *Theriogenology.* 25: 35.
- Pankowski, J.W., D.M. Galton, H.N. Erb, C.L. Guard, and Y.T Grohn. 1995. Use of prostaglandin F2 alpha as a postpartum reproductive management tool for lactating dairy cows. *J. Dairy Sci.* 78:1477.
- Pate, J.L. 1995. Involvement of immune cells in regulation of ovarian function. *J. Reprod. Fertil. Suppl.* 49:365.
- Petroff, M., K.M. Coggeshall, L.S. Jones, and J.L. Pate. 1997. Bovine luteal cell elicit major histocompatibility complex class II-dependent T-cell proliferation. *57:887.*
- Phipps, R.P., S.H. Stein, and R.L. Roper. 1991. A new view of prostaglandin E regulation of the immune response. *Immunol. Today.* 12:349.
- Pitzell, L., H. Jarry, and W. Wuttke. 1993. Different steroidogenic response of young and aged porcine small and large luteal cells to prostaglandin F2alpha, oxytocin, and estradiol. *Exp. Clin. Endocrinol.* 101:255.

Pryjma, J., B. Mytar, H. Loppnow, M. Ernst, M. Zembala, and H.D. Flad. 1992. FcR+ and FcR-monocytes differentially secrete monokines during pokeweed mitogen-induced T-cell-monocyte interactions. *Immunology*. 75:355.

Ramadan, A.A., B.L. Sayre, and G.S. Lewis. 1997. Regulation of uterine immune function during the estrous cycle and in response to infectious bacteria in sheep. *J. Anim. Sci.* 75:1621.

Rao, K.M., M.S. Currie, H.J. Cohen, and J.B. Weinberg. 1989. Chemotactic peptide receptor-cytoskeletal interactions and functional correlations in differentiated HL-60 cells and human polymorphonuclear leukocytes. *J. Cell. Physiol.* 141:119.

Reed, H.C.B. 1969. Artificial insemination and fertility of the boar. *Br. Vet. J.* 125:272.

Roberts, J.S., J.A. McCracken, J.E. Gavagan and M.S. Soloff. 1976. Oxytocin-stimulated release of prostaglandin F<sub>2</sub> from ovine endometrium in vitro: Correlation with estrous cycle and oxytocin-receptor binding. *Endocrinology*. 99:1107.

Roitt, I., J. Brostoff, and D. Male. 1998. *Immunology*. 5<sup>th</sup> ed. Mosby International Ltd., Lynton House, London, UK.

Roth, J.A., and M.L. Kaeberle. 1981. Isolation of neutrophils and eosinophils from the peripheral blood of cattle and comparison of their functional activities. *J. Imm. Meth.* 45:153.

Rowson, L.E.A., G.E. Lamming, and R.M. Fry. 1953. The relationship between ovarian hormones, and uterine infections. *Vet. Rec.* 65:335.

Saad, A.M., C. Concha, and G. Astrom. 1989. Alterations in neutrophil phagocytosis and lymphocyte blastogenesis in dairy cows around parturition. *J. Vet. Med. Ser. B* 36:337.

Sakamoto, K., M. Kamimura, S. Kurozumi, and S. Ito. 1995. Prostaglandin F<sub>2</sub> alpha receptor. *J. Lipid. Mediat. Cell Signal.* 12:405.

Sakamoto, K., T. Ezashi, K. Miwa, E. Okuda-Ashitaka, T. Houtani, T. Sugimoto, S. Ito, and O. Hayaishi. 1994. Molecular cloning and expression of a cDNA of the bovine prostaglandin F<sub>2</sub>alpha receptor. 269:3881.

Santoli, D., G. Trinchieri, and F.S. Lief. 1978. Cell-mediated cytotoxicity against virus-infected cells in humans. *J. Immunol.* 121:526.

Saper, C.B, and C.D. Breder. 1994. The neurologic basis of fever. *N. Engl. J. Med.* 330:1880.

SAS Institute, Inc. 1985. *SAS User's Guide: Statistics, Version 5 Edition*. SAS Inst., Inc., Cary, NC.

SAS Institute, Inc. 1985. *SAS User's Guide: Statistics, Version 5 Edition*. SAS Inst., Inc., Cary, NC.

Scofield, A.M., F.G. Clegg, and G.E. Lamming. 1974. Embryonic mortality and uterine infection in the pig. *J. Reprod. Fertil.* 36:353.

Sehic, E., M. Szekely, A.L. Ungar, A. Oladehin, and C.M. Blatteis. 1996. Hypothalamic prostaglandin E2 during lipopolysaccharide-induced fever in guinea pigs. *Brain Res. Bull.* 39:391.

Shapiro, D.J., M.C. Barton, D.M. McKearin, T.C. Chang, D. Lew, J. Blume, D.A. Neilsen, and L. Gould. 1989. Estrogen regulation of gene transcription and mRNA stability. *Recent Prog. Horm. Res.* 45:29.

Sharma, S.C. and R. J. Fitzpatrick. 1974. Effect of oestradiol-17 $\beta$  and oxytocin treatment on prostaglandin F alpha release in the anoestrous ewe. *Prostaglandins* 6:97.

Shau, H., M.D. Roth, and S.H. Golub. 1993. Regulation of natural killer function by nonlymphoid cells. *Nat. Immun.* 12:235.

Sims, M.H., and H. Eiler. 1979. Porcine mastitis-metritis-agalactia (MMA) syndrome: mammary gland responsiveness to oxytocin given to healthy sows during lactation. *Am. J. Vet. Res.* 40:1104.

Sirko, S., I. Bishai, and F. Coceani. 1989. Prostaglandin formation in the hypothalamus in vivo: effect of pyrogens. *Am. J. Physiol.* 256:R616.

Skarzynski, D.J., M. Bogacki, and J. Kotwica. Involvement of ovarian steroids in basal and oxytocin-stimulated prostaglandin (PG) F2 alpha secretion by the bovine endometrium in vitro. *Theriogenology.* 52:385.

Soloff, M. S. 1975. Uterine receptor for oxytocin: Effects of estrogen. *Biochem. Biophys. Res. Comm.* 65:205.

Spencer, T.E., and F.W. Bazer. 1995. Temporal and spatial alterations in uterine estrogen receptor and progesterone receptor gene expression during the estrous cycle and early pregnancy in the ewe. *Biol. Reprod.* 53:1527.

Spencer, T.E., W.C. Becker, P. George, M.A. Mirando, T.F. Ogle, F.W. Bazer. 1995. Ovine interferon tau inhibits estrogen receptor up-regulation and estrogen induced luteolysis in cyclic ewes. *Endocrinology.* 136:4932.

Spitzer, J.A., P. Zhang, and A.M.S. Mayer. 1994. Functional characterization of peripheral circulating and liver recruited neutrophils in endotoxic rats. *J. Leuk. Biol.* 56:166.

Stankova, J. and M. Rola-Pleszczynski. 1992. Leukotriene B4 stimulates c-fos and c-jun gene transcription and AP-1 binding activity in human monocytes. *Biochem. J.* 282:625.

- Stankova, J., G. Dupuis, N. Gagnon, M. Thivierge, S. Turcotte, and M. Rola-Pleszczynski. 1993. Priming of human monocytes with leukotriene B4 enhances their sensitivity in IL-2-driven tumor necrosis factor- production. Transcriptional and post-transcriptional upregulation of IL-2 receptors. *J. Immunol.* 150:4041.
- Steffan, J., M. Agric, S. Adriamanga, and M. Thibier. 1984. Treatment of metritis with antibiotics or prostaglandin F2 alpha and influence of ovarian cyclicity in dairy cows. 45:1090.
- Stitt, B.L., and M.R. Webb. 1986. Absence of a phosphorylated intermediate during ATP hydrolysis by Escherichia coli transcription termination protein rho. *J. Biol. Chem.* 26:15906.
- Studer, E., and D.A. Morrow. 1978. Postpartum evaluation of bovine reproductive potential: comparison of findings from genital tract examination per rectum, uterine culture, and endometrial biopsy. *JAVMA.* 172:489.
- Styrt, B. and B. Sugarman. 1991. Estrogens and infection. *Rev. Infect. Dis.* 13:1139.
- Sugimoto, Y., T. Namba, A. Honda, Y. Hayashi, M. Negishi, A. Ichikawa, and S. Narumiya. 1992. Cloning and expression of a cDNA for mouse prostaglandin EP3 subtype. *J. Biol. Chem.* 267:6463.
- Tay, Y.K., W.L. Weston, and J.L. Aeling. 1996. Reactive perforating collagenosis in Treacher Collins Syndrome. *J. Am. Acad. Dermatol.* 35:982.
- Thorns, C.J., G.A. Wells, J.A. Morris, A. Bridges, and R. Higgins. 1989. Evaluation of monoclonal antibodies to K88, K99, F41 and 987P fimbrial adhesins for the detection of porcine enterotoxigenic Escherichia coli in paraffin-wax tissue sections. *Vet. Microbiol.* 20:377.
- Thurmond, M.C., C.M. Jameson, and J.P. Picanso. 1993. Effect of intrauterine antimicrobial treatment in reducing calving-to-conception interval in cows with endometritis. *JAVMA.* 203:1576.
- Timonen, T., J.R. Ortaldo, and R.B. Herberman. 1982. Analysis of a single cell cytotoxicity assay of natural killer (NK) cells frequencies among human large granular lymphocytes and the effects of interferon on their activity. *J. Immunol.* 128:2514.
- Ting, A.T., R.A. Schoon, R.T. Abraham, and P.J. Leibson. 1992. Interaction between protein kinase C-dependent and G protein dependent pathways in the regulation of natural killer cells granule exocytosis. 267:23957.
- Tizard, I.R. 1996. *Veterinary Immunology an Introduction*. 5<sup>th</sup> ed. W.B. Saunders Co., Philadelphia, PA.
- Toh, H., A. Ichikawa, and S. Narumiya. 1995. Molecular evolution of receptors for eicosanoids. *FEBS Lett.* 361:17.

Townsend, D.H., and J.L. Pate. 1994. Regulation of prostaglandin synthesis by interleukin-1 beta in cultured bovine luteal cells. *Biol. Reprod.* 51:480.

Tsai, S.J., and M.C. Wiltbank. 1997. Prostaglandin F<sub>2</sub>alpha induces expression of prostaglandin G/H synthase-2 in the ovine corpus luteum: a potential positive feedback loop during luteolysis. *Biol. Reprod.* 57:1016.

Van Epps, D.E., J.G. Bender, S.J. Simpson, and D.E. Chenoweth. 1990. Relationship of chemotactic receptors for formyl peptide and C5a to CR1, CR3, and Fc receptors on human neutrophils. *J. Leuk. Biol.* 47:519.

Vane, J.R. 1971. Inhibition of prostaglandin synthesis as a mechanism of action for aspirin-like drugs. *Nature New Biol.* 231:232.

VanFurth, R. and W. Sluiter. 1986. Distribution of blood monocytes between a marginating and a circulating pool. *J. Exp. Med.* 163:474.

Wade, D.E. and G.S. Lewis. 1996. Exogenous prostaglandin F<sub>2</sub>a stimulates utero-ovarian release of prostaglandin F<sub>2</sub>a in sheep: a possible component of the luteolytic mechanism of action of exogenous F<sub>2</sub> . 13:383.

Waltz, F.A., C.W. Foley, R.C. Herschler, L.W. Tiffany, and B.J. Liska. 1968. Bacteriological studies of boar semen. *J. Anim. Sci.* 27:1357.

Watabe, A., Y. Sugimoto, A. Honda, A. Irie, T. Namba, M. Negishi, S. Ito, S. Narumiya, and A. Ichikawa. 1993. Cloning and expression of cDNA for a mouse EP1 subtype of prostaglandin E receptor. *J. Biol. Chem.* 27:20175.

Wathes, D.C. and M. Hamon. 1993. Localization of oestradiol, progesterone and oxytocin in the uterus during the oestrus cycle and early pregnancy of the ewe. *J. Endocrinology.* 138:479-491.

Watson, E.D., N.K. Diehl, and J.F. Evans. 1990. Antibody response in the bovine genital tract to intrauterine infusion of *Actinomyces pyogenes*. *Res. Vet. Sci.* 48:70.

Watts, T.H., and M.A. DeBennette. 1999. T cell co-stimulatory molecules other than CD28. *Curr. Opin. Immunol.* 11:286.

Wenzel, J.G., J.C. Wright, and R.L. Carson. 1993. Use of prostaglandin products by dairy cattle owners, beef cattle owners, and veterinarians. *JAVMA.* 203:1732.

Wiltbank, M.C., T.F. Shiao, D.R. Bergfelt, and O.J. Ginther. 1995. Prostaglandin F<sub>2</sub>α receptors in the early corpus luteum. *Biology of Reproduction* 52:74.

Wray, L.V., M.R. Atkinson, and S.H. Fisher. 1994. The nitrogen-regulated *Bacillus subtilis* nrgAB operon encodes a membrane protein and a protein highly similar to the *Escherichia coli* glnB-encoded PII protein. *J. Bacteriol.* 176:108.

Wulster-Radcliffe, M.C., B.A. Costine, and G.S. 1999. Lewis. Estradiol-17beta-oxytocin-induced cervical dilation in sheep: application to transcervical embryo transfer. *J. Anim. Sci.* 77:2587.

Wurfel, M.M., S.T. Kunitake, H. Lichenstein, J.P. Kane, and S.D. Wright. 1994. Lipopolysaccharide (LPS)-binding protein is carried on lipoproteins and acts as a cofactor in the neutralization of LPS. *J. Exp. Med.* 180:1025.

Yagita, H., M. Nakata, A. Kawasaki, Y. Shinkai, and K. Okumua. 1992. Role of perforin in lymphocyte-mediated cytolysis. *Adv. Immunol.* 51:215.

Yamamoto, T., N. Wakisaka, T. Nakae, T. Kamano, O. Serichantalergs, And P. Echeverria. 1996. Characterization of a novel hemagglutinin of diarrhea-associated *Escherichia coli* that has characteristics of diffusely adhering *E. coli* and enteroaggregative *E. coli*. *Infect. Immun.* 64:3694.

Youngquist, R.S., and T.W.A. Little. 1988. Anestrus and infertility in the cow. *Fertility and Infertility in Veterinary Practice*. 4<sup>th</sup> ed. J.A. Laing, W.J. Brinley Morgan, and W.C. Wagner, ed. Bailliere Tindall, Philadelphia, PA.

Zanker, B., G. Walz, K.J. Wieder, and T.B. Strom. 1990. Evidence that glucorticoids block expression of the human interleukin-6 gene by accessory cells. *Transplantation.* 49:183.

Zelinski, M.B., N.A. Hirota, E.F. Keenan, and F. Stormshak. 1982. Influence of exogenous estradiol-17 on endometrial progesterone and estrogen receptors during the luteal phase of the ovine estrous cycle. *Biol. Reprod.* 23:743.

Zhang, J., P.G. Weston, and J.E. Hixon. 1991. Influence of estradiol on the secretion of oxytocin and prostaglandin F2 alpha during luteolysis in the ewe. *Biol. Reprod.* 45:395.

Zingg, H.H., F. Rozen, K. Chu, A. Larcher, A. Arslan, S. Richard, and D. Lefebvre. 1995. Oxytocin and oxytocin receptor gene expression in the uterus. *Recent Prog. Horm. Res.* 50:255.