

เอกสารอ้างอิง

- Ainsworth, L., Daenen, M. and Ryan, K.J. "Steroid hormone transformation by endocrine organs form pregnant mammals IV. Biosynthesis and metabolism of estrogens and progesterone by primate placenta preparation in vitro" Endocrinology 84(1969) : 1421-1429.
- Ainsworth, L. and Ryan, K.J. "Steroid hormone transformations by endocrine organs form pregnant mammal. V. The biosynthesis and metabolism of progesterone and estrogen by urangutan placental tissue in vitro" Steroids 14(1969) : 301-314.
- Atkinson, L.E., Hotchkiss, J., Fritz, G.R., Surve, A. H., Neil, J.D. and Knobil, E. "Circulating levels of steroid and chorionic gonadotrophin during pregnancy in the rhesus monkey, with special attention to the rescue of corpus luteum in early pregnancy" Biol. Reprod. 12(1975) : 335-345.
- Arslan, M., Meyer, R.K. and wolf, R.C. "Chorionic gonadotrophin in the blood and urine of Pregnant rhesus monkeys (Macaca mulatta)" Proc. Soc. Exp. Biol, Med. 125(1967) : 349-352.
- Aubry, R.H. "The Random urine estrogen/creatinine ratio" Obstet. Gynec. 46(1975) : 64-68.

- Bedford, C.A., Challis, J.R.G., Harrison, F.A. and Heap, R.B.
"The role of estrogen and progesterone in the onset of parturition in various species" J. Reprod. Fert. Suppl. 16(1972) : 1-23.
- Bloch, E. and Benirschke, K. "Acetate incorporation into 3 β -hydroxy Δ 5 and Δ 4-3-ketosteroids by human fetal adrenal slices" Acta Endocrin. (Suppl.) (kbh) 51 (1960) : 691.
- Bolte, E.M., S.Erikson, G., wqvist, N. and Diczfalusy, E.
"Studies on the aromatization of neutral steroid in pregnant women. 3. overall aromatization of dehydroepiandrosterone sulfate circulating in the fetal and maternal compartments" Acta Endocrin. (Kbh) 45(1964) : 576-599.
- Bonney, R.C. and Kingsley, S. "Endocrinology of pregnancy in the urangutan (Pongo pygmaeus) and its evolutionary significance" Inter. J. Primatol. 3(1982) : 431-444.
- Boot, R. and Huis in't Veld, L.G. "Pregnancy Diagnosis in Macaca fascicularis Hemagglutination Inhibition Test for Urinary Chorionic Gonadotrophin and Implantation Bleeding" J. med. Primatol. 10(1981) : 141-148.
- Bosu, W.T.K., Johansson, E.D.B. and Gemzell, C. "Patterns of circulating estrone, estradiol-17 β and progesterone during pregnancy in the rhesus monkey" Acta Endocrin. 74(1973) : 743-755.

Braunstein, G.D., Rasor, J., Adler, D., Danzer, H. and Wade, M.E.

"Serum human chorionic gonadotrophin levels throughout normal pregnancy" Amer. J. Obstet. Gynec. 126(1976) : 678-681.

Brown, J.B. "Urinary excretion of estrogen during pregnancy,

lactation, and the re-establishment of menstruation" Lancet 1(1956) : 764-707.

_____. "The relationship between urinary estrogen and estrogens produced in the body" J. Endocrin. 16(1957) : 202-212.

Caldwell, B.V., Auletta, F.J., Gordon, J.W. and Speroff, L.

"Future studies on the role of prostaglandins in reproductive physiology" Third conference on prostaglandins in fertility control Bergstrom, S., Green, K. and Samuelsson, B. (editors) p.217 WHO Research and Training Centre on Human Reproduction, Karolinska Institute, 1972.

Cassmer, O. "Hormone production of the isolated human placenta studies on the role of the fetus in the endocrine function of the placenta" Acta Endocrin. Suppl. 45(1959) : 9-82.

Castellanos, H. and McCombs, H.L. "The reproductive cycle of New

World Monkey. Gynecologic problem in a breeding colony" Fertil. Steril. 19(1968) : 213-227.

- Cekan, Z. Reserch in reproduction (Edwards, R.G. ed) The international planned parenthood federation, London, 1972.
- Challis, J.R.G. "Sharp increase in free circulating estrogens immediately before parturition in sheep" Nature (London) 229(1971) : 208.
- Challis, J.R.G. Davies, I.J., Benirschke, K., Hendrickx, A.G. and Ryan, K.J. "The concentration of progesterone, estrone and estradiol-17 β in the peripheral plasma of the rhesus monkey during the final third of gestation and after the induction of abortion with PGF_{2 α} " Endocrinology 95(1974) : 547-553.
- Challis, J.R.G. and Thorburn, G.D. The fetal pituitary-adrenal axis and it functional interactions with the neurohypophysis in : fetal physiology and medicine (Beard, R. and Nathanielsz, P.W. ed.) London, 1976.
- Chen, H.C., Hodgen, G.D. "Primate chorionic gonadotrophins : Antigenic similarities to the unique carboxyl-terminal peptide of hCG β subunit" J. Clin. Endocrinol. Metab. 43 (1976) 1414-1417.
- Clegg, M.T. and Weaver, M. "Chorionic gonadotrophin secretion during pregnancy in the chimpanzee" Proc. Soc. exp. Biol. Med. 139(1972) : 1170-1174.
- Czekala, N.M., Hodges, J.K. and Lasley, B.L. "Pregnancy monitoring in diverse primate species by estrogen and bioactive luteinizing hormone determinations in small volumes of urine" J. Med. Primatol. 10(1981) : 1-15.

- Dawood, M.Y. and Fuchs, F. "Estradiol and progesterone in the maternal and fetal circulation in the baboon" Biol. Reprod. 22(1980) : 179-184.
- Dickey, R.P., Besch, P.K., Vorys, N. and Ullery, J.C. "Diurnal excretion of estrogen and creatinine during pregnancy" Amer. J. Obstet. Gynce. 94(1966) : 591-594.
- Diczfalusy, E. "Endocrine functions of the human placenta" Acta Endocrine. Kbh34. Suppl50. (1960) 129-134.
- _____. "Metabolism of sex hormones by the fetus" Mod. Trends. Hum. Reprod. Physiol. 1(1963) : 67-80.
- _____. "A modified theory of steroid synthesis in the human feto-placental unit" symp. Deutsch. Ges. Endocrin. 16(1970) : 32-46.
- Diczfalusy, E. and Mancuso, S. Estrogen metabolism in pregnancy in Klopper and Diczfalusy fetus and placenta pp. 191-248, Blackwell, oxford, 1969.
- Diczfalusy, E. and Lindkvist, P. "Isolation and estimation of "free" estrogen in human placenta" Acta Endocrin. Kbh. 22(1956) : 203-223.
- Dukelow, W.R., Brüggemann, S. "Characteristics of menstrual cycle in nonhuman primates II. Ovulation and optimal mating times in macaque" J. Med. Primatol. 8(1979) : 79-87.
- Dukelow, W.R., Grauwiler, J. and Brüggemann, S. "Characteristics of the menstrual cycle in nonhuman primates I. Similarities and dissimilarities between Macaca fascicularis and Macaca arctoides" J. med. Primatol. 8(1979) : 39-47.

- Elmadjian, F. and Forchielli, E. Proceeding international congress on hormone steroids p.535 Academic press, New York, 1965.
- Fuchs, A.R. "Parturition in rabbits and rats" Memoirs of the Society for Endocrinology 20(1973) : 187.
- Galhotra, M.A., Farooqand, A. and Laumas, K.R. "Invitro effect of human placental lactogen on steroidogenesis in human placental tissue from early pregnancy" Indian J. Physio. Pharmacol. 24(1980) : 183-189.
- Glass, R.H. and Wagenen, G.V. "Immunologic test for chorionic gonadotrophin in serum of the pregnant monkey (Macaca mulatta)" Proc. Soc. Exp. Biol. Med. 134(1970) : 467-468.
- Gribnau, A.A.M. "Immunologic pregnancy test in monkey (Macaca mulatta)": J. med. Primatol. 4(1975) : 65-69
- Gulyas, B.J. Yuan, L.C. and Hodgen, G.D. "Synthesis of progesterone and estradiol by monkey luteal cell in culture : Effect of insulin, thyroxine, cortisol and cholesterol with and without hCG" Biol. Reprod. 23(1980) : 21-28.
- Guyton, A.C. Basic human physiology p.337, W.B. Saunders company, Philadelphia, 1977.
- Hampton, J.K., Jr., Levy, B.M. and Sweet, P.M. "Chorionic gonadotrophin excretion during pregnancy in the marmoset (Callithrix jacchus)" Endocrinology 85(1969) : 171-174.
- Hull, M.G.R. "The basis and application of estrogen assay on urine and blood to assess-fetoplacental function in late pregnancy" J. Perinat. Med. 4(1976) : 137-162.

Harper H.A. Review of physiological chemistry 14th ed., p.398,
LANGE Medical Publication, California, 1973.

Hertig, A.T. and Rock, J. "Two human ova of the pre-villous stage,
having a developmental age of about eight and nine days
respectively" Contrib. Embryol. Carneg. Inst. 29(1941) :
127-156.

Hendrick, A.G. Embryology of baboon University of Chicago Press,
Chicago and London, 1971.

Hobson, B.M. "The excretion of chorionic gonadotrophin in
normal pregnancy and in women with hydatidiform mole"
J. obstet. Gynaec. Br. Emp. 65(1955) : 253-259.

_____. "Excretion of gonadotrophin by the pregnant baboon.
(Papio cyanocephalus)" Folia primat. 12(1970) : 111-115

_____. "Gonadotrophin concentration in the placenta of
man, the rhesus monkey and the marmoset" Folia primatol.
18(1972) : 35-40.

Hobson, B.M. and wide, L. "A comparison between chorionic
gonadotrophins extracted from human rhesus monkey and
marmoset placenta" J. Endocrin. 55(1972) : 363-368.

_____. "The simirality of chorionic gonadotrophin
and it subunit in term placentae from man apes old and new
world monkeys and a prosimian" Folia primatol. 35(1981):
51-64.

- Hodgen, G.D., Dufau, M.L., Catt, K.J. and Tullner, W.W.
"Estrogen, progesterone and chorionic gonadotrophin in pregnant rhesus monkeys" Endocrinology 91(1972) : 896-900.
- Hodgen, G.D., Nieman, W.H. and Tullner W.W. "Duration of chorionic gonadotrophin production by the placenta of the rhesus monkey" Endocrinology 96(1975) : 789-791.
- Hodgen, G.D. and Tullner, W.W. "Plasma estrogens, progesterone and chorionic gonadotrophin in pregnant rhesus monkeys (Macaca mulatta) after ovariectomy" Steroid 25(1975) 275-282.
- Hodgen, G.D. Tullner, W.W., Vaitukaitis, J.L., Ward, D.N. and Ross, G.T. "Specific radioimmunoassay of chorionic gonadotrophin during implantation in rhesus monkeys" J. clin. Endocrin. Metab. 39(1974) : 457-464.
- Hodges, J.K., Brand, H., Henderson, C. and Kelly, R.W. "Levels of circulating and urinary estrogens during pregnancy in the marmoset monkey (Callithrix jacchus)" J. Reprod. Fert. 67(1983) : 73-82.
- Hodges, J.K., Czekala, N.M. and Lasley, B.L. "Estrogen and luteinizing hormone secretion in diverse primate species from simplified urinary analysis" J. Med. Primatol. 8(1979) : 349-364.
- Hopper, B.R. and Tullner, W.W. "Urinary estrogen excretion patterns in pregnant rhesus monkey" Steroid 9(1967): 517-527.

- Hopper, B.R., Tullner, W.W. and Gray, C.W. "Urinary estrogen excretion during pregnancy in a gorilla" Proc. Soc. exp. Biol. Med. 129(1968) : 213-214.
- Howland, B.E., Faiman, C. and Butler, T.M. "Serum levels of FSH and LH during the menstrual cycle of the chimpanzee" Biol. Reprod. 4(1971) : 101-105.
- Jackanicz, T.M. and Diczfalusy, E. "Absence of 16- α hydroxylating activity in the human midterm placenta" Steroids 11(1968) : 877-944.
- Kamonpatana, M., Verakul, P., Lohachit, C., Kunawongkrit, A., Ngramsuriyaroj, C. and Mathias, E. "Plasma progesterone, estrone sulphate and LH levels during pregnancy, parturition, and postpartum in the swamp buffaloes" Proc. Nuclear Techniques to Improve Domestic Buffalo Production in Asia Bangkok, 1981.
- Kelley, P.A., Tsushima, T., Shiu, R.P., et al. "Lactogenic and growth hormone-like activity in pregnancy determine by radioreceptor assay" Endocrinology. 99(1976) : 765-774.
- Kinzey, W.T. "Concentration of gonadotrophin in the Urine of the pregnant monkey (Macaca mulatta) Anat. Rec. 151 (1965) : 372-373.
- Koering, M.J., Wolf, R.C. and Meyer, R.K. "Morphological and functional evidence for corpus luteum activity during late pregnancy in the rhesus monkey" Endocrinology 93 (1973) : 686-693.

Kosasa, T., Levesque, L., Goldstein, D.P. and Taymor, M.L.

"Early detection of implantation using a radioimmunoassay specific for human chorionic gonadotrophin" J. Clin Endocrin. 36(1973) : 622-624.

Lau, H.L., Lawrence, K.W., Linkins, S.E. and Jones, G.S. "Early

detection of human chorionic gonadotrophin in urine by simple immunoassays" Amer. J. obstet. Gynec. 132(1978) : 691-693.

Laumas, K.R. "Urinary excretion of estrogens in rhesus monkey"

J. Endocrin. 31(1965) : 297-298.

Lenton, E.A., Neal, L.A. and Sulaiman, R. "Plasma concentration

of human chorionic gonadotrophin from the time of implantation until the second week of pregnancy" Fertil. Steril. 37(1982) : 773-778.

Lequin, R.M., Elvers, L.H. and Bartens, A.P.M.G. "Early detection

of pregnancy in rhesus and stump tailed macaques (Macaca mulatta and Macaca arctoides) evaluation of two radioimmunoassay and a hemagglutination inhibition test" J. med. Primatol. 10(1981) : 189-198.

Liggins, G.C., Christine, S.F., Susan, A.G. and Schwartz, A.L.

"Control of parturition" Biol. Reprod. 16(1977) : 39-56.

Liggin, G.C., Grieves, S.A., Kendall, J.Z. and Knox, B.S. "The

physiological roles of progesterone, estrone, estradiol-17 β and prostaglandin F_{2 α} in the control of ovine parturition" J. Reprod. Fert. suppl. 16(1972) : 85-90.

- Liggins, G.C. and Howie, R.N. "A controlled trial of antepartum glucocorticoid treatment for prevention of the respiratory distress syndrome in premature infants" Pediatrics 50(1972) : 515-525.
- Liskoski, L., Wolf, R.C., Chandler, S. and Meyer, R.K. "Urinary estrogen excretion in pregnant rhesus monkeys" Biol. Reprod. 3(1970) : 55-60.
- Luckett, W.P. "The fine structure of the placental villi of the rhesus monkey (Macaca mulatta)" Anat. Rec. 167(1970) : 141-164.
- Luther, E.R., Macleod, S.C. and Langan, M.J. "The Value of single specimen estriol/creatinine determinations during pregnancy" Amer. J. Obstet. Gynec. 116(1973) : 9-14.
- Lyon, R.E., Simpson, M.E. and Evans, H.M. "Qualitative changes in urinary gonadotrophin in human pregnancy during the period of rapid increase in the hormone titer" Endocrinology 53(1953) : 674-686.
- Marrian, G.F. "The chemistry of estrin III An improved method of preparation and the isolation of active crystalline material" Biochem. J. 24(1930) : 435-445.
- Mazur, A. and Harrow, B. Text book of Biochemistry p.533, 10th edition, W.B. Saunders Company, Philadelphia, 1971.
- Merkatz, I.R. and Beling, C.G. "Urinary excretion of estrogens and pregnanediol in the pregnant baboon" J. Reprod. Fert. Suppl. 6(1969) : 129-135.

- Meyer, R.K. "Chorionic gonadotrophin, corpus luteum function and embryo implantation in the rhesus monkey" Acta endocrin. Kbh. 71, suppl. 166(1972) : 214-217.
- Meyer, R.K., Wolf, R.C. and Arslan, M. "Implantation and maintenance of pregnancy in progesterone-treated ovariectomized monkeys (Macaca mulatta)" Proc. 2nd Int. Congr. Primat. 2:pp. 30-35. Karger, Basel, 1969.
- Milewich, L, and Axelrod, L.R. "Metabolism of 4-(14C)-testosterone by lyophilized baboon placenta microsomes" Endocrinology 88(1971) : 589-595.
- Mishell, D.R, Jr., Wide, L. and Gemzell, C.A. "Imunological determination of human chorionic gonadotrophin in serum" J. Clin. Endocrin. 23(1963) : 125-131.
- Monroe, S.E., Atkinson, L.E. and Knobil, E. "Patterns of circulating luteinizing hormone and their relation to plasma progesterone levels during the menstrual cycle of the rhesus monkey" Endocrinology 87(1970) : 453-455.
- Murphy, B.E., Clark, S.J., Donald, I.R. et al. "Conversion of maternal cortisol to cortisone during placental transfer to the human fetus" Amer. J. obstet Gynecol. 118(1974) : 538-541.
- Murphy, B.E., Patrick, J. and Denton, R.L. "Cortisol in amniotic fluid during human gestation" J. clin Endocrinol. Metab. 40(1975) : 164-167.

- Nathan, T.S., Rosenblum., L.A. Limson, G. and Nelson, J.H. Jr.,
"Diagnosis of pregnancy in the squirrel monkey" Anat. Rec.
155(1966) : 531-536.
- Novy, M.J., Cook, M.J. and Manaugh, L. "Indomethacin block of
normal onset of parturition in primates" Amer. J. obstet.
Gynecol. 118(1974) : 412-416.
- Nwosu, U.C., Wallach, E.E. and Bologness, R.J. "Initiation of
labor by intraamniotic cortisol instillation in prolonged
human Pregnancy" Obstet. Gynec. 47(1976) : 137-142.
- Oakey, R.E. "The interpretation of urinary estrogen and pregnan-
ediol excretion in pregnant women receiving corticosteroids"
J. obstet Gynaec. Br. Commonw. 77(1970) : 922-927.
- Osofsky, H.J., Nesbitt, R.E.L., Jr. and Hagen, J.H. "High risk
obstertrics : IV. Estrogen/creatinine ratio in routine
urine sample as a method of screening a high risk
obstetric population" Amer. J. obstet. Gynec. 106(1970) :
692-698.
- Pierce, G.B. Jr., Midgley, A.R. Jr. and Beals, T.F. "An ultra-
structural study of differentiation and maturation of
trophoblast of the monkey" Lab. Invest. 13(1964) :
451-464.
- Rayan, J.K. and Smith, O.W. "Biogenesis of estrogens by the
human ovary. I. Conversion of acetate-C¹⁴ to estrone
and estradiol" J. Biol. Chem. 236(1961a) : 705-709.

Rayan, J.K. and Smith, O.W. "Biogenesis of estrogens by the human ovary. II. Conversion of Cholesterol-4-C¹⁴ to estrone" *Ibid.* 236(1961b) : 710-714.

_____. "Biogenesis of estrogens by the human ovary. III. Conversion of Cholesterol-4-C¹⁴ to estrone" *Ibid.* 236(1961c) : 2204-2206.

_____. "Biogenesis of estrogens by the human ovary. IV. Formation of neutral steroid intermediates. *Ibid.* 236(1961d) : 2207-2212.

Rayan, K.J., Benirschke, K. and Smith, O.W. "Conversion of androstenedione-4-C¹⁴ to estrone by the marmoset placenta" *Endocrinology* 69(1961) : 613-618.

Reck, G., Nowostawskyj, H. and Breckwoldt, M. "Effect of ACTH and dexamethasone on the diurnal rhythm of unconjugated estriol in pregnancy" *Acta Endocrin.* Kbh 87(4) (1978) : 820-827.

Robyn, C., Petrusz, P. and Diczfalusy, E., "Follicle stimulating hormone-like activity in human chorionic gonadotrophin preparation" *Acta Endocrin.* kbh. 60(1969) : 137-156.

Seaton, B. "Patterns of estrogen and testosterone excretion during pregnancy in a gorilla (*Gorilla gorilla*)" *J. Reprd. Fert.* 53(1978) : 231-236.

Shandilya, L.N., Ramaswami, L.S. and Shandilya, N. "estrogen metabolites in urine during the menstrual cycle, pregnancy and puerperium in the Indian hanuman langur (*Presbytis entellus entellus*)" *J. Reprd. Fert.* 47(1976) : 7-11.

- Shinada, T. and Ryan, K.J. "The invitro biosynthesis and metabolism of progesterone and androgen by chimpanzee placenta tissue" Steroid 21(1973) : 233-244.
- Sholl, S.A., Robinson, J.A. and Wolf, R.C. "Estrone , 17 beta-estradiol and cortisol in serum of peripartum rhesus monkeys" Endocrinology 104(5) (1979) : 1274-1278.
- Siiteri, P.K. and MacDonald, P.C. "Placental estrogen biosynthesis during human pregnancy" J. Clin. Endocrin. 26(1966) : 751-761.
- Simmer, H.H., Tulchinsky, D. Gold, E.M., et al. "On the regulation of estrogen production by cortisol and ACTH in human pregnancy at term" Memorial Foundation award thesis Amer. J. Obstet. Gynecol. 119(1974) : 283-296.
- Smith, R.A., Albert, A. and Randall, L.M. "Chorionic gonadotrophin in the blood and urine during early pregnancy" Amer. J. Obstet. Gynec. 61(1951) : 514-526.
- Smith, I.D. and Shearman, R.P. "Fetal plasma steroids in relation to parturition" J. Obstet. Gynec. Br. Commonw. 81(1974) : 11-15.
- Snyder, D.L., Goebelsmann, U., Jaffe, R.B. and Kirton, K.T. "Extent of in vivo aromatization of dehydroepiandrosterone sulfate and dehydroepiandrosterone by perfused Macaca mulatta" Endocrinology 88(1971) : 274-278.
- Solomon, S. "Synthesis of steroids by the placenta" The placenta and Fetal membrane (In ville, Ca. ed.) p.201, Williams and Wilkins, 1960.

- Theppisai, H., Mishell, D.R. Jr. and Nakamura, R.M. "Comparison of a rapid new method of Hemagglutination Inhibition Assay of HPL with micro-complement fixation and radioimmunoassay" J. clin. Endocrin. Metab. 32(1971) : 382-388.
- Thorburn, G.D., Nicol, D.H., Bassett, J.M., Shutt, D.A. and Cox, R.I. "Parturition in the goat and sheep : changes in corticosteroids, progesterone, estrogens and prostaglandin F." J. Reprod. Fert. Suppl. 16(1972) : 61-84.
- Townsley, J.D. "Utilization of dehydroepiandrosterone and its sulphate for estrogen production by pregnant baboons (Papio cyanocephalus) Acta Endocrin. kbh. 1(4) (1976) : 830-838.
- Tulchinsky, D. "Placenta secretion of unconjugated estrone, estradiol and estriol into the maternal and fetal circulation" J. clin. Endocrinol. Metab. 36(1973) : 1079-1087.
- Tulchinsky, D., Hobel, C.J., Yearger, E. and Marshall, J.R. "Estrone, estradiol, progesterone and 17 - hydroxy progesterone in human pregnancy" Amer. J. Obstet. Gynecol. 112(1972) : 1095-1110.
- Tullner, W. "Chorionic gonadotrophin in the pregnant rhesus monkey" in Lund and Choate, Transcript of the 4th Rochester trophoblast conference. pp.359-373, Univ. of Rochester, 1967.
- Tullner, W.W. "Urinary chorionic gonadotrophin excretion in the monkey (Macaca mulatta) early phase" Endocrinology 82 (1968) : 874-875.

Tullner, W.W. "Chorionic gonadotrophin in nonhuman primates"

The use of non-human primates in research on human reproduction, WHO Symposium, 206, Stockholm, 1971.

Tullner, W.W. and Gray, C.W. "Chorionic gonadotrophin excretion during pregnancy in a gorilla" Proc. Soc. Exp. Biol. Med. 128(1968) : 954-956.

Tullner, W.W. and Hertz, R. "Comparative aspects of chorionic gonadotrophin production in nonhuman primates" in Moor-Jankowski and Goldsmith Medical primatology 1970, Proc. 2nd Conf. exp. Med. Surg. Primate. pp 553-561, Karger, Basel, New York, 1971.

Tullner, W.W., Kayford, P.L. and Ross, G.T. "Evidence for similar antigenic determinants in gonadotrophins from urine of man and monkey (Macaca mulatta)" Endocrinology 84(1969) 908-911.

Vaitukaitis, J.L; Ross, G.T., Reichert, L.E. and ward, D.N. "Immunologic basis for within and between species cross-reactivity of luteinizing hormone." Endocrinology 91(1972) : 1337-1342.

Varadaraj, C., Wolf, R.C., Dierschke, J.D., Sholl, S.A. and Bridson, W.E. "Serum progesterone and corpus luteum function in pregnant pigtailed monkey (Macaca nemestrina)" Steroid 36(1980) : 483-496.

Varavudhi, P. Tangpraprutigul, P and Lamsa-ad, P. "Relationships between serum E_2 and progesterone levels and urinary mCG in pregnant Macaca fascicularis." J. Steroid Biochem. 17 (1982) : xcii.

Wehrenberg, W.B., Dyrenfurth, I. and Ferin, M. "Endocrine characteristics of the menstrual cycle in the assamese monkey (Macaca assamensis) Biol. Reprod. 23(1980) : 522-525.

Wide, L. and Gemzell, C.A. "An immunological pregnancy test" Acta Endocrin. kbh. 35(1960) : 261-267.

Wide, L. and Newton, J. "An immunological cross reaction between monkey gonadotrophin preparation and antisera to human gonadotrophins" J. Reprod. Fert. 27(1971) : 103-106.



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

ตารางที่ 1 แสดงค่า E_1 ทั้งหมด, E_1 อัตรา และเปอร์เซ็นต์ของ E_1 อัตราต่อ E_1 ทั้งหมด

ของนิคมบางบัว 23

วันที่ ตั้งครุฑ	E_1 ทั้งหมด	E_1 อัตรา	ΣE_1 อัตรา ต่อ E_1 ทั้งหมด	วันที่ ตั้งครุฑ	E_1 ทั้งหมด	E_1 อัตรา	ΣE_1 อัตรา ต่อ E_1 ทั้งหมด
18	21.09	1.19	5.92	94	15.71	0.64	4.07
19	9.00	0.10	1.11	98	23.28	4.14	17.78
20	3.78	0.12	3.17	102	54.92	1.53	2.79
28	6.67	0.66	9.90	105	10.33	1.02	9.37
29	4.56	1.03	22.58	107	43.27	8.58	19.83
30	6.66	0.32	4.80	113	65.88	9.89	22.86
31	81.44	28.77	35.33	115	18.77	1.35	7.19
32	4.31	0.40	9.28	118	17.67	9.31	52.69
33	3.14	0.26	8.28	123	57.13	9.52	16.66
34	14.00	0.28	2.00	129	55.78	5.24	9.50
35	5.81	0.24	4.13	130	3.26	0.07	2.15
38	3.21	0.59	18.38	131	14.27	5.61	39.31
39	4.07	0.44	10.81	132	49.98	2.15	4.30
40	3.68	0.34	9.24	134	48.41	0.63	1.29
44	3.70	1.25	33.78	138	26.97	10.65	39.49
45	6.74	0.46	6.82	140	8.22	0.78	9.49
47	6.16	0.11	1.79	143	4.92	1.20	24.39
49	5.15	0.45	8.74	145	9.88	1.72	17.40
53	5.22	0.22	4.21	146	14.98	3.40	22.70
58	6.18	0.29	4.69	149	68.90	13.35	19.38
62	237.49	31.70	13.34	150	21.77	11.42	52.46
65	10.88	0.19	1.75	152	44.11	18.27	41.42
68	9.57	0.66	6.90	153	16.88	10.58	62.68
72	8.04	0.59	7.34	155	10.96	7.79	71.08
76	13.22	1.28	9.68	D ₁	8.13	3.30	40.59
81	44.72	10.19	22.79	D ₄	1.43	0.33	23.08
84	273.66	5.29	1.93	D ₆	1.38	0.09	6.52
87	7.73	2.88	37.26	D ₇	2.01	0.05	2.49
90	25.06	1.09	4.34				

ของคิงทราจยาวเบอร์ 50

วันที่ คิงทราจ	E_1 ทั้งหมด	E_1 อัตรา	ΣE_1 อัตรา ต่อ E_1 ทั้งหมด	วันที่ คิงทราจ	E_1 ทั้งหมด	E_1 อัตรา	ΣE_1 อัตรา ต่อ E_1 ทั้งหมด
16	5.86	0.53	9.00	97	11.71	2.12	18.10
19	3.24	0.41	12.65	103	12.45	1.38	11.08
22	6.31	0.67	10.62	107	13.18	2.67	20.26
24	6.08	0.77	12.66	109	9.70	2.31	23.81
25	6.71	0.94	14.01	113	13.82	2.96	21.42
26	5.93	0.53	8.94	115	13.68	2.37	17.32
28	7.10	0.72	10.14	117	10.19	1.74	17.08
29	7.28	0.98	13.46	120	8.94	1.66	18.57
30	5.68	0.33	5.81	121	13.09	2.02	15.43
31	4.73	0.42	8.88	125	12.91	2.25	17.43
32	4.67	0.51	10.92	126	10.50	1.71	16.29
33	4.88	0.22	4.51	130	18.06	3.38	10.72
34	2.47	0.16	6.48	131	12.49	3.12	24.98
36	4.77	0.31	6.50	133	11.62	2.44	21.00
40	3.32	0.19	5.72	134	16.58	4.76	28.71
41	3.57	0.20	5.60	136	18.15	4.93	27.16
46	2.29	0.12	5.24	138	22.43	5.36	23.90
47	5.51	0.22	3.99	139	14.53	4.32	29.73
49	6.51	0.46	7.07	140	5.12	1.22	23.83
52	5.02	0.48	9.56	145	28.91	6.38	22.07
53	4.42	0.39	8.82	146	94.52	18.60	19.68
54	3.13	0.27	8.63	149	32.10	12.21	38.04
55	4.43	0.25	5.64	150	14.98	4.33	28.90
57	3.92	0.21	5.36	152	30.15	6.39	21.19
65	12.01	1.32	10.99	153	32.23	6.59	20.45
72	9.08	1.26	13.87	155	45.11	7.72	17.11
78	9.37	2.21	23.59	159	25.21	1.32	5.24
83	12.25	2.67	21.79	162	14.00	3.68	26.29
84	9.97	1.89	18.96	165	43.26	7.17	16.57
89	11.38	2.25	19.77	L_2	12.80	1.21	9.45
92	7.55	1.33	17.62	L_4	4.32	0.22	5.09
96	7.08	1.12	15.82				

ตารางที่ 3 แสดงค่า E_1 ทั้งหมด, E_1 ด้าน และเปอร์เซ็นต์ของ E_1 ด้านต่อ E_1 ทั้งหมด
ของเส้นทางยาวเบอร์ 67

วันที่ สังเกต	E_1 ทั้งหมด	E_1 ด้าน	$\frac{E_1 \text{ ด้าน}}{E_1 \text{ ทั้งหมด}}$	วันที่ สังเกต	E_1 ทั้งหมด	E_1 ด้าน	$\frac{E_1 \text{ ด้าน}}{E_1 \text{ ทั้งหมด}}$
10	4.71	0.54	11.46	117	19.22	1.45	7.54
19	3.60	0.46	12.77	118	20.33	1.35	6.64
20	0.99	0.21	21.21	121	22.00	0.57	2.59
23	0.74	0.33	44.59	123	12.30	2.09	16.99
24	3.20	0.62	19.38	127	19.81	6.05	29.63
29	1.76	0.10	5.68	129	13.60	4.03	14.77
30	0.45	0.10	22.22	131	14.42	2.13	14.77
31	1.61	0.23	14.29	134	13.28	0.86	6.48
32	2.90	0.09	3.10	135	13.70	0.26	1.90
44	9.55	0.18	1.88	136	30.27	1.37	4.53
49	1.05	0.15	14.28	137	33.12	5.93	17.90
55	1.96	0.61	31.12	140	44.72	5.77	12.90
59	1.02	0.45	44.11	141	33.74	3.26	9.66
63	6.03	0.59	9.78	142	37.23	2.27	6.10
65	1.86	0.64	33.40	143	29.19	5.98	20.49
67	4.48	0.10	2.23	144	54.16	3.20	5.91
69	3.17	0.10	3.22	148	50.61	0.68	1.34
72	9.39	0.50	5.38	149	305.30	24.64	8.06
76	6.62	0.13	1.96	150	93.55	1.32	1.41
83	5.73	0.18	3.14	151	39.20	5.12	13.06
86	3.22	0.51	15.83	156	63.70	1.21	1.90
90	6.22	0.72	11.57	160	24.46	6.49	26.53
92	4.55	0.24	5.27	161	54.03	5.64	10.44
96	238.90	69.28	29.00	163	146.30	24.97	17.07
97	20.50	5.23	25.51	164	71.08	9.87	13.89
102	12.90	3.20	24.81	167	41.92	3.56	8.49
105	44.10	14.42	32.70	L_1	13.10	2.68	11.60
109	73.50	21.21	28.86	L_2	10.53	0.78	7.41
111	13.73	3.29	23.96				

ของคลังทางยาวเบอร์ 93

วันที่ ตั้งครุฑ	E_1 ทั้งหมด	E_1 ว่าง	% E_1 ว่าง ต่อ E_1 ทั้งหมด	วันที่ ตั้งครุฑ	E_1 ทั้งหมด	E_1 ว่าง	% E_1 ว่าง ต่อ E_1 ทั้งหมด
23	3.47	0.17	4.90	106	107.25	46.43	43.29
24	2.52	0.11	7.24	110	157.02	37.76	24.05
27	14.74	0.40	2.71	111	183.65	27.60	15.03
28	2.97	0.20	6.73	117	39.07	0.97	2.48
31	1.67	0.21	12.57	118	6.91	0.73	10.56
33	1.52	0.11	7.24	121	21.64	0.42	1.94
34	92.53	0.67	0.72	124	18.47	0.58	3.14
40	1.48	0.06	4.05	128	21.50	3.37	15.67
42	3.90	0.40	10.26	130	35.55	0.36	1.01
45	6.47	1.31	20.25	132	7.07	2.72	38.47
46	4.30	0.60	13.95	135	36.90	1.89	5.12
48	0.62	0.30	48.39	136	24.05	0.24	1.00
49	12.06	1.40	11.61	140	25.12	0.27	1.07
55	12.89	1.43	11.09	141	61.25	4.68	7.64
56	16.60	1.26	7.59	145	28.84	4.75	16.47
57	6.78	1.63	24.04	146	25.52	2.14	8.38
61	2.12	0.25	11.79	148	8.26	0.93	11.26
62	3.95	1.19	30.13	149	12.90	1.82	14.11
64	8.96	0.45	5.02	151	8.72	0.91	10.44
66	10.23	0.29	2.83	153	12.21	1.57	12.86
70	4.84	0.14	2.89	154	10.67	6.84	64.10
75	7.28	0.35	4.81	155	14.83	1.05	7.08
79	10.42	0.11	1.06	160	28.96	0.23	0.79
84	7.39	1.39	1.88	161	15.96	3.76	23.56
89	77.42	0.98	1.27	162	37.38	21.13	56.53
90	86.73	0.75	0.86	163	68.70	4.92	7.16
91	31.03	0.55	1.77	164	80.63	2.78	3.45
92	6.52	0.23	3.53	L ₄	18.34	0.09	.49
97	73.18	44.97	61.45	L ₇	3.40	0.10	2.94
98	216.83	40.27	18.57	L ₁₀	1.87	0.09	4.81
103	191.90	41.91	21.84				

ตารางที่ 5 แสดงค่า E_1 ทั้งหมด, E_1 อัตรา และเปอร์เซ็นต์ของ E_1 อัตราต่อ E_1 ทั้งหมด

ของเส้นทางยาวเบอร์ 95

วันที่ สังเกต	E_1 ทั้งหมด	E_1 อัตรา	% E_1 อัตรา ต่อ E_1 ทั้งหมด	วันที่ สังเกต	E_1 ทั้งหมด	E_1 อัตรา	% E_1 อัตรา ต่อ E_1 ทั้งหมด
10	6.85	1.06	15.47	116	24.10	0.92	3.82
19	14.50	0.42	2.89	119	24.69	0.32	1.30
22	10.86	2.56	23.50	120	26.50	0.30	1.13
23	9.70	2.57	26.49	124	25.20	2.23	8.85
24	16.11	1.86	11.55	128	26.10	0.14	0.54
25	14.90	2.81	18.86	130	27.60	1.33	4.93
26	17.53	0.14	7.99	132	22.00	2.22	10.09
27	15.91	0.26	1.63	134	25.50	4.93	19.33
28	8.60	0.70	8.14	136	20.82	3.43	16.47
33	13.90	0.24	1.73	138	97.14	1.35	1.39
36	6.80	0.13	1.91	140	25.55	1.67	6.54
50	2.50	0.05	2.00	142	24.55	1.32	5.38
56	3.10	0.26	8.39	145	30.70	0.50	1.63
58	3.84	0.10	2.60	147	81.81	1.23	1.50
62	7.72	0.63	8.16	149	25.10	1.89	7.53
65	7.61	0.68	8.93	150	80.77	5.60	6.93
68	11.18	0.56	5.01	151	43.70	0.30	.69
70	12.70	0.05	0.39	156	30.70	0.89	2.90
75	16.52	0.73	4.42	157	38.52	4.77	12.38
80	14.00	0.06	0.43	159	36.51	1.14	3.12
85	9.90	0.61	6.16	161	61.40	7.10	11.56
88	28.60	0.70	2.45	163	89.13	5.27	5.91
94	88.72	18.09	20.39	165	63.68	1.63	2.60
96	17.65	0.76	4.31	167	58.75	1.70	5.91
101	18.72	2.71	14.48	170	87.20	2.02	2.32
108	23.43	0.61	2.60	L ₁	13.20	2.55	19.32
113	24.54	0.12	0.49	L ₂	10.51	2.13	20.26
115	16.10	1.47	9.13	L ₃	4.67	0.72	15.42

ตารางที่ 6 แสดงค่า E_1 ทั้งหมด, E_1 อัตรา และเปอร์เซ็นต์ของ E_1 อัตราต่อ E_1 ทั้งหมด

ของสำนักงานตำรวจ 98

วันที่ สังเกต	E_1 ทั้งหมด	E_1 อัตรา	ΣE_1 อัตรา E_1 ทั้งหมด	วันที่ สังเกต	E_1 ทั้งหมด	E_1 อัตรา	ΣE_1 อัตรา ต่อ E_1 ทั้งหมด
10	6.90	1.24	17.97	53	3.80	1.78	46.84
11	6.81	4.62	67.84	57	3.21	0.60	18.69
12	8.69	2.38	27.39	63	28.73	18.95	65.96
13	6.73	2.17	32.24	70	3.18	0.47	14.78
14	4.00	1.20	30.00	75	6.30	2.23	35.40
15	8.50	2.32	27.29	78	1.72	0.35	20.35
16	4.00	1.17	29.25	81	3.12	2.26	72.44
17	3.22	0.87	26.71	87	4.59	1.04	22.66
18	1.21	0.34	28.10	91	6.41	1.45	22.62
19	33.72	0.33	9.78	97	10.42	2.36	22.64
20	51.20	36.42	71.13	102	118.99	1.40	1.78
25	11.29	2.02	17.89	105	0.81	0.07	8.58
26	3.13	0.15	4.79	109	9.00	0.20	2.22
27	2.50	0.26	10.40	116	6.90	0.34	22.22
28	3.21	1.19	37.07	126	7.70	1.01	13.12
29	2.90	0.58	20.00	130	4.40	0.73	16.59
30	75.86	35.04	46.19	136	5.22	1.68	32.38
32	2.96	0.75	25.34	140	3.01	1.07	35.55
34	2.80	1.19	42.50	147	2.60	0.96	36.92
36	89.99	31.34	34.83	155	12.40	4.96	40.00
38	2.70	0.51	18.89	158	37.45	11.22	29.96
40	6.41	1.06	16.54	L_1	2.88	0.81	28.13
42	4.10	1.54	37.56	L_3	2.00	0.56	28.00
43	7.40	3.35	45.27	L_6	2.30	0.55	23.91
44	2.10	0.81	38.57	L_7	3.60	0.25	6.94
47	3.61	0.86	23.82				
49	3.10	0.90	29.03				

ตารางที่ 7 แสดงความเฉพาะเจาะจงของอีส์โตรน แอนติซีรัม เค 4/3676 ต่อสเตอรอยด์ต่างๆ

Steroids	% cross reactivity
Oestradiol-17 β	0.45%
Oestriol	0.013%
Cortisol	0.005%
Testosteron	0.010%
5 α dihydrotestosterone	0.012%
5 β dihydrotestosterone	0.005%
Dehydro epiandrosterone	0.027%
Etiocholanol	0.007%
Androsterone	0.014%
Androsten (4) dion (3.17)	0.013%
Androsten (5) diol (3 β .17)	0.006%
Pregnenolone	0.012%
17 α Hydroxy progesterone	0.005%
Cortisone	0.005%
Progesterone	0.013%
Corticosterone	0.005%
Pregnandiols	0.005%
11 β Desoxy corticosterone	0.009%
Cholesterol	0.005%
11 β Hydroxy progesterone	0.006%
5 α Pregnan (3.20) dion	0.008%
Oestrone	100.0 %

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

ประวัติ

นายประสงค์ หล้าละเอียด เกิดวันที่ 23 พฤศจิกายน พ.ศ. 2496 ที่จังหวัดกาญจนบุรี
สำเร็จปริญญา การศึกษาบัณฑิต สาขา ชีววิทยา เกียรตินิยมอันดับ 1 จากคณะศึกษา
ศาสตร์มหาวิทยาลัยศรีนครินทรวิโรฒบางแสน เมื่อปีการศึกษา 2519 ปัจจุบันรับราชการ
ตำแหน่งอาจารย์ 1 วิทยาลัยครูสุราษฎร์ธานี กรมการฝึกหัดครู กระทรวงศึกษาธิการ



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย