

B-1991

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UNIVERSIDAD DE BUENOS AIRES
FACULTAD DE CIENCIAS EXACTAS Y NATURALES

DEPARTAMENTO..... Ciencias Biológicas
ASIGNATURA. Tópicos de Citog. (Gametog.) ORIENTACION..... Genética y Evolución
CARRERA. Lic. en Cs. Biológicas PLAN.....
CARACTER. Postgrado.....
DURACION DE LA MATERIA... Mes y medio.....
HORAS DE CLASE: a) Teóricas..... 40 b) Problemas..... hs.
c) Laboratorio.. 10.... d) Seminarios... 4..... hs.
e) Totales... 54.....

ASIGNATURAS CORRELATIVAS .. Carrera de la Lic. completa o alumnos del último año

PROGRAMA

1. Introducción a la Meiosis. Diferenciación sexual. Determinación gonadal. Gametogénesis en hembras de mamíferos. Desarrollo del ovario. Formación de los ovocitos. Activación e inactivación del cromosoma X.
2. Ovogénesis. Esquema general. Estudio comparativo con la espermatogénesis. Gametogénesis y fecundación. Células germinales masculinas y femeninas. Tabla de desarrollo prenatal en humanos. Ilustraciones.
3. Proceso meiótico. 1^a división meiótica. Formación de bivalentes. Complejo sinaptonémico. Intercambio entre cromátides. 2^{da} división meiótica.
4. Citogenética de la meiosis. Técnicas para la observación de la 1^a profase meiótica. Cromosomas bivalentes. Complejos sinaptonémicos. Estructuras nucleares.
5. Aspectos patológicos de la meiosis. Interpretación de figuras. Meiosis e infertilidad.

BIBLIOGRAFIA

Se adjunta el listado sugerido

Fecha: 8.de.marzo.de.1991.....

Firma Profesor:

aclaración de firma.. Montserrat García.Caldés..

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Bibliografia del curs: FONAMENTS BIOLOGICS DE LA REPRODUCCIO (separate)

- Ashley T., Pocock N.
A proposed model of chromosomal organization in nuclei at fertilization
Genetica, 55, 161-169 (1981)
- Baker T.G.
Gametogenesis
Symposium on the use of non-human primates for research on problems of human reproduction
Sukhum, USA, 13-17 December (1971), 18-41
- Baker B.S., Carpenter A.T.C., Esposito H.S., Esposito R.E., Sandler L
The genetic control of meiosis
Ann. Rev. Genet. 10, 53-54 (1976)
- Bavister B.D.
Recent progress in the study of early events in mammalian fertilization
Develop. Growth and Differ. 22, 385-402 (1980)
- Bedford J.M.
Significance of need for sperm capacitation before fertilization in eutherian mammals
Biol. Reprod. 28, 108-120 (1983)
- Bustos-Obregon E., Courot M., Flechon J.E., Hochereau-de-Reviers M.T., Holstein A.F.
Morphological appraisal of gametogenesis. Spermatogenic process in mammals with particular reference to man
Andrologia 7 (2): 141-163 (1975)
- Byskov A.G.
Regulation of meiosis in mammals
Ann. Biol. animin Bioch. Biophys. 19 (4b) 1251-1261 (1979)

- Chaganti R.S.K., Jhanwar S.C., Ehrenbard L.T., Kourides I.A., Williams J.J.
Genetically determined asynapsis, spermatogenic degeneration and infertility in man
Am. J. Hum. Genet. 32, 833-848 (1980)
- Chandley A.C.
The origin of chromosomal aberrations in man and their potential for survival and reproduction in the human population
Ann. Genet. 24 (1), 5-11 (1981)
- Chandley A.C.
Male infertility and meiosis in man
Oligozoospermia: Recent Progress in Andrology Gd by G. Frajese et al.
Raven Press, New York (1981)
- Esponda P.
El complejo sinaptinémico y la estructura del cromosoma meiótico
Artigos Gerais de Revisão
Broteria-Genética, Lisboa II (LXXVII) 85-123 (1981)
- Gillies C.B.
Synaptonemal complex and chromosome structure
Annual Review of Genetics 9, 91-109 (1975)
- Golubouskaya I.N.
Genetic control of meiosis
Intern. Review of Cytology, 58, 247-290 (1979)
- Groppe A., Winking H.
Robertsonian translocations: cytology, meiosis, segregation patterns and biological consequences of heterozygosity
Symp. Zool. Soc. Lond. 47, 141-181 (1981)
- Holm P.B., Rasmussen S.W.
Human meiosis I. The human pachytene karyotype analyzed by three dimensional reconstruction of the synaptonemal complex
Carlsberg Res. Commun. vol. 42, 283-323 (1977)

- Holm P.B., Rasmussen S.W.
Human meiosis II. Electron microscopical analysis of chromosome pairing in an individual with a balanced translocation 46,XY,t (5p; 22p+)
Carlsberg Res. Commun. vol. 43, 329-350 (1978)
- Luciani J.M.
Le contrôle génétique de la méiose chez l'homme
Inserm 103, 153-170 (1981)
- Menchini Fabris G.F., Voliani S., Olivieri L., Izzo P.L.
Meiosis in infertile men
Oligozoospermia: Recent Progress in Andrology Ed. Frajese et al.
Raven Press, New York (1981)
- Mezquita Pla C.
Espermatogénesis
Investigación y Ciencia, Enero 7-18 (1981)
- Moor R.M., Warnes G.M.
Regulation of meiosis in mammalian oocytes
British Medical Bulletin 35(2) 99-103 (1979)
- Nijhoff J.H., de Boer P.
Spontaneous meiotic non-disjunction in mammals A study evaluating the various experimental approaches
Genetica 56, 99-121 (1981)
- Rasmussen S.W., Holm P.B.
Human meiosis II. Chromosome pairing and recombination nodules in human spermatocytes
Carlsberg Res. Commun. vol. 43, 275-327 (1978)
- Rasmussen S.W., Holm P.B.
Human meiosis IV. The elimination of synaptonemal complex fragments from metaphase I bivalents of human spermatocytes
Carlsberg Res. Comun. vol. 43, 423-438 (1978)

INSTITUT DE BIOLOGIA FONAMENTAL

Universitat Autònoma de Barcelona

- Rasmussen S.W., Holm P.B.
Mechanics of meiosis
Hereditas, 93, 187-216 (1980)
- Rogers J.
Mammalian sperm capacitation and fertilization in vitro. A critique of methodology
Gamete Research 1, 165-223 (1978)
- Roosen-Runge E.C.
Spermatogonia and kinetics of spermatogenesis
The process of spermatogenesis in animals. Developmental and Cell Biology Series. Ed. M. Abervembie D.R. Newth and J.G. Torrey Cambridge University Press (1977)
- Stahl A., Luciani J.M.
La Meiose au cours de l'ovogenèse embryonnaire humaine
Société de Biologie de Marseille, 126801274 (1970)
- Stern H., Hotta Y.
Biochemical control of meiosis
Ann. Rev. Genet. 7, 37-66 (1973)
- Stern H., Hotta Y.
Biochemistry of meiosis
Phil. Trans. R. Soc. Lond. B277, 277-294 (1977)
- Stern H., Hotta Y.
The organization of DNA metabolism during the recombinational phase of meiosis with special reference to humans
Molecular and Cellular Biochemistry 29(3), 145-158 (1980)
- Freixa, L., Garcia, M., Ponsà, M., Navarro, J., Egozcue, J.
Sequential study of the synaptonemal complex in Syrian hamster (Mesocricetus auratus) and mouse (Mus musculus) oocytes by light and electron microscopy
Genetica, 67, 87-97 (1985)

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INSTITUT DE BIOLOGIA FONAMENTAL

Universitat Autònoma de Barcelona

- Bojko, M.
 - Human Meiosis IX. Crossing over and chiasma formation in oocytes
Carlsberg Res. Commun. Vol. 50, p. 43-72 (1985)
- Bojko, M.
 - Human Meiosis VIII. Chromosome pairing and formation of the synaptonemal complex in oocytes
Carlsberg Res. Commun. Vol. 48, p. 457-483 (1983)
- Kurilo, L.F.
 - Oogenesis in Antenatal Development in Man
Human Genetics, 57, 86-92 (1981)
- Fang, J.S., Jagiello, G.
 - Complete Chromomere Map of Mid/Late Pachytene Human Oocytes
Am. J. Hum. Genet. 35, 879-888 (1983)
- Speed, R.M.
 - The prophase stages in human foetal oocytes studied by light and electron microscopy
Hum. Genet. 69, 69-75 (1985)
- Yanagimachi, R. et al.
 - Maturation of Spermatozoa in the Epididymis of the Chinese Hamster
The American J. of Anatomy, 172, 317-330 (1985)

je

- Oogenesis
Biggers J.D., Schnetz A.W. Eds.
University Parle Press, Baltimore (1972)
- The ovary I. General Aspects
Zuckerman L., Weir B.J. Eds.
Academic Press, New York (1977)
- The vertebrate ovary
Comparative Biology and Evolution
Plenum Press, New York (1978)
Jones R.E. Eds.
- Biology of the ovary
P.M. Motta and E.S.E. Hafez
Developments in Obstetrics and Gynecology (1980)
- Bioregulators of reproduction
Jagiello G., Vogel H-S Eds.
Academic Press, New York (1981)
- Reproduction in mammals: 1, 2, 3, 4, 5
Eds. by C.R. Austin and R.V. Short
Cambridge University Press (1972, 1982)
- The ovary
Eds. by G.B. Serra
Raven Press (1983)
- Ultrastructure of Reproduction, Gametogenesis, Fertilization and Embryogenesis
J. Van Blerkom/Motta
Martinus Nijhoff Pub.
- Developmental Biology, vol 1: Oogenesis
Ed. by L.W. Browder (1985)

jl

- The Physiology of Reproduction
Edited by E. Knobil and J. Neill et al.
Raven Press Ltd. New York (1988)

- Developmental Biology
Scott F. Gilbert
Sinauer Associates (1988), (2nd edition)

PF

- A.W. Schnets (1974): Role of Hormones in Oocyte Maturation. *Biology of Reproduction* 10: 150-178
- R.H. Foote (1975): The Gametogenic Function of the Aging Ovary in the Mammal. *Aging Gametes*, Int. Symp., Seattle (1973), pp. 179-200
- J.W. Gordon and F.H. Ruddle (1981): Mammalian Gonadal Determination and Gametogenesis. *Science* 211: 1265-1271
- K. Takizawa and D.R. Mattison (1983): Female Reproduction. *American Journal of Industrial Medicine* 4: 17-30
- P.M. Wise (1983): Aging of the Female Reproductive System. *Review of Biological Research in Aging* 1: 195-222
- S.V. Nicosia (1983): Morphological Changes of the human ovary through life in the ovary. Ed. by G.B. Serra, Raven Press, pp. 57-81
- G.C. Balboni (1983): Structural Changes: Ovulation and luteal Phase in the Ovary. Ed. by G.B. Serra, Raven Press, pp. 123-141
- B.S. Dunbar and D.J. Wolgemuth (1984): Structure and Function of the Mammalian Zona Pellucida a Unique Extracellular Matrix. *Modern Cell Biology* 3: 77-111
- Y. Masui (1985): Problems of Oocyte Maturation and the Control of Chromosome Cycles. *Develp. Growth and Differ.* 27(3): 295-309
- R. Bachvarova (1985): Gene Expression During Oogenesis and Oocyte Development in Mammals in *Developmental Biology* ed. by L.W. Browder. Vol. 1, Oogenesis pp. 453-517
- J.J. Eppig (1985): Oocyte-Somatic Cell Interactions During Oocyte Growth and Maturation in the Mammal in *Developmental Biology*. Ed. by L.W. Browder, vol. 1 Oogenesis
- G.F. Erickson, D.A. Magoffin, Ch.A. Dyer and Ch. Hofeditz (1985): The Ovarian Androgen Producing Cells: A Review fo Structure/Function Relationships in *Endocrine Reviews*. Ed. by Endocrine Society pp. 371-399
- R.P. Erickson (1985). La saga de los espermatozoides. *Mundo Científico*, vol. 5 nº 52: 1086-1097

- A.G. Byskov et al. (1986): Ultrastructure of germ cells and adjacent somatic cells correlated to initiation of meiosis in fetal pig. Anat. Embryol. 175: 57-67
- S.J. Segal (1985): Sexual Differentiation in Vertebrates in the Origin and Evolution of Sex, pp. 263-270. Alan R. Liss
- T. Taketo, S.S. Koide and H. Merchant-Larios (1985): Gonadal Sex Differentiation in Mammals in the Origin and Evolution of Sex, pp. 217-287. Alan R. Liss
- A. McLaren (1985): Mouse Germ Cells: Fertilization to birth. Arch. Anat. Micr. Morphol. Expér. Tome 54 no 1, pp. 5-9
- A. McLaren (1985): Relation of Germ Cell Sex to Gonadal Differentiation in the Origin and Evolution of Sex, pp. 289-300. Alan R. Liss
- G.F. Erickson (1986): An Analysis of Folicle Development and Ovum Maturation. Seminars in Reproductive Endocrinology, vol. 4 no 3, August 1986, 233-254
- G.F. Erickson (1986): The Ovary: Basic Principles and Concepts in Endocrinology and Metabolism, 2nd. edition (P. Feling et al. eds.) Mc Graw Hill Book
- T.G. Baker (1986): Gametogenesis in Comparative Primate Biology, vol. 3: Reproduction and Development, pp. 195-213
- C. Thibault, D. Szöllösi, M. Gérard (1987). Reprod. Nutr. Dévelop. 27 (5): 865-896
- K. Willison, A. Ashworth (1987): Mammalian espermatogenic gene expression. Trends in Genetics, vol. 3 no 12: 351-355
- P.M. Wassarman (1987): The Zona Pellucida: A coat of Many Colors. Bio Essays vol. 6 no 4: 161-166
- T.M. Plant (1988): Puberty in Primates in the Physiology of Reproduction. Ed. by E. Knobil and J. Neill et al. Raven Press, pp. 1763-1788
- R.P. Erickson (1990): Post-meiotic gene expression. Trends in Genetics, vol. 6 no 8: 264-269
- P.M. Wasserman (1988): The Mammalian Ovum in the Physiology of Reproduction. Ed. by E. Knobil et al. Raven Oress Ltd.

DR. JUAN C. GIACCHI
SECRETARIO ACA - MICO
Dpto. CIENCIAS BIOLOGICAS