Aaron Hsueh
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Bio

ACADEMIC APPOINTMENTS
- Professor, Obstetrics & Gynecology - Reproductive Biology
- Member, Bio-X
- Member, Child Health Research Institute

LINKS
- Hsueh Lab Home Page: http://reprobio.stanford.edu/hsueh/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS
We have been investigating the molecular and cellular mechanisms underlying the hormonal regulation of ovarian follicle growth and differentiation. By expressing recombinant FSH, LH and hCG and producing their mutants, we have designed long-acting agonists as well as deglycosylated antagonists of gonadotropins. We have also cloned human LH and FSH receptors and the expression of these proteins allows analysis of gonadotropin bioactivity in vitro. The extracellular ligand-binding domain of these receptors have been generated and found to be functional antagonists. Clinical syndromes of gain-of-function mutations for the LH receptor have been found in patients with familial male precocious puberty whereas loss-of-function mutations have been found to be the basis of Leydig cell hypoplasia. We are using bioinformatic tools and DNA microarray to analyze polypeptide hormones and their receptors in terms of ligand-receptor matching and paracrine interactions.

Publications

PUBLICATIONS
- Promotion of Ovarian Follicle Growth following mTOR Activation: Synergistic Effects of AKT Stimulators. PloS one
  Cheng, Y., Kim, J., Li, X. X., Hsueh, A. J.
  2015; 10 (2)
- A Naturally Occurring Lgr4 Splice Variant Encodes a Soluble Antagonist Useful for Demonstrating the Gonadal Roles of Lgr4 in Mammals PLOS ONE
  2014; 9 (9)
- A Single-Nucleotide Polymorphism of Human Neuropeptide S Gene Originated from Europe Shows Decreased Bioactivity PLOS ONE
  Deng, C., He, X., Hsueh, A. J.
  2013; 8 (12)
- Hippo signaling disruption and Akt stimulation of ovarian follicles for infertility treatment PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA
  2013; 110 (43): 17474-17479
- Actin Cytoskeleton Regulates Hippo Signaling *PLOS ONE*
  Reddy, P., Deguchi, M., Cheng, Y., Hsueh, A. J.
  2013; 8 (9)

- Oocyte-derived R-spondin2 promotes ovarian follicle development. *FASEB Journal*
  Cheng, Y., Kawamura, K., Takae, S., Deguchi, M., Yang, Q., Kuo, C., Hsueh, A. J.
  2013; 27 (6): 2175-2184

- Multi-functional norrin is a ligand for the LGR4 receptor *JOURNAL OF CELL SCIENCE*
  2013; 126 (9): 2060-2068

- A Novel Reproductive Peptide, Phoenixin *JOURNAL OF NEUROENDOCRINOLOGY*
  2013; 25 (2): 206-215

- Evolution of a Potential Hormone Antagonist following Gene Splicing during Primate Evolution. *PloS one*
  Deng, C., Hsueh, A. J.
  2013; 8 (5)

- Promotion of Human Early Embryonic Development and Blastocyst Outgrowth In Vitro Using Autocrine/Paracrine Growth Factors *PLOS ONE*
  2012; 7 (11)

- C-Type Natriuretic Peptide Stimulates Ovarian Follicle Development *MOLECULAR ENDOCRINOLOGY*
  2012; 26 (7): 1158-1166

- Ovarian Kaleidoscope Database: Ten Years and Beyond *BIOLOGY OF REPRODUCTION*
  Hsueh, A. J., Rauch, R.
  2012; 86 (6)

- Intraovarian Thrombin and Activated Protein C Signaling System Regulates Steroidogenesis during the Periovulatory Period *MOLECULAR ENDOCRINOLOGY*
  2012; 26 (2): 331-340

- The Role of Cilostazol, a Phosphodiesterase 3 Inhibitor, on Oocyte Maturation and Subsequent Pregnancy in Mice *PLOS ONE*
  Li, M., Yu, Y., Yan, J., Yan, L., Zhao, Y., Li, R., Liu, P., Hsueh, A. J., Qiao, J.
  2012; 7 (1)

- Pre-ovulatory LH/hCG surge decreases C-type natriuretic peptide secretion by ovarian granulosa cells to promote meiotic resumption of pre-ovulatory oocytes *HUMAN REPRODUCTION*
  2011; 26 (11): 3094-3101

- Oocyte-Expressed Interleukin 7 Suppresses Granulosa Cell Apoptosis and Promotes Oocyte Maturation in Rats *BIOLOGY OF REPRODUCTION*
  2011; 84 (4): 707-714

- Gonadotrophin-induced paracrine regulation of human oocyte maturation by BDNF and GDNF secreted by granulosa cells *HUMAN REPRODUCTION*
  Zhao, P., Qiao, J., Huang, S., Zhang, Y., Liu, S., Yan, L., Hsueh, A. J., Duan, E.
  2011; 26 (3): 695-702

- Activation of dormant ovarian follicles to generate mature eggs *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Li, J., Kawamura, K., Cheng, Y., Liu, S., Klein, C., Liu, S., Duan, E., Hsueh, A. J.
  2010; 107 (22): 10280-10284

* Autocrine regulation of early embryonic development by the artemin-GFRA3 (GDNF family receptor-alpha 3) signaling system in mice *FEBS LETTERS*
Li, J., Klein, C., Liang, C., Rauch, R., Kawamura, K., Hsueh, A. J.
2009; 583 (15): 2479-2485

- **Paracrine regulation of the resumption of oocyte meiosis by endothelin-1** *DEVELOPMENTAL BIOLOGY*
  2009; 327 (1): 62-70

- **Neuronostatin Encoded by the Somatostatin Gene Regulates Neuronal, Cardiovascular, and Metabolic Functions** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  2008; 283 (46): 31949-31959

- **Obestatin induction of early-response gene expression in gastrointestinal and adipose tissues and the mediatory role of G protein-coupled receptor, GPR39** *MOLECULAR ENDOCRINOLOGY*
  2008; 22 (6): 1464-1475

- **Gonadotropin stimulation of ovarian fractalkine expression and fractalkine augmentation of progesterone biosynthesis by luteinizing granulosa cells** *ENDOCRINOLOGY*
  Zhao, P., De, A., Hu, Z., Li, J., Mulders, S. M., Gelpke, M. D., Duan, E., Hsueh, A. J.
  2008; 149 (6): 2782-2789

- **Completion of Meiosis I of preovulatory oocytes and facilitation of preimplantation embryo development by glial cell line-derived neurotrophic factor** *DEVELOPMENTAL BIOLOGY*
  2008; 315 (1): 189-202

- **Regulation of preimplantation embryo development by brain-derived neurotrophic factor** *DEVELOPMENTAL BIOLOGY*
  2007; 311 (1): 147-158

- **Matching receptome genes with their ligands for surveying paracrine/autocrine signaling systems** *MOLECULAR ENDOCRINOLOGY*
  Ben-Shlomo, I., Rauch, R., Avsian-Kretchmer, O., Hsueh, A. J.
  2007; 21 (8): 2009-2014

- **Intraovarian tumor necrosis factor-related weak inducer of apoptosis/fibroblast growth factor-inducible-14 ligand-receptor system limits ovarian preovulatory follicles from excessive luteinization** *MOLECULAR ENDOCRINOLOGY*
  De, A., Park, J., Kawamura, K., Chen, R., Klein, C., Rauch, R., Mulders, S. M., Gelpke, M. D., Hsueh, A. J.
  2006; 20 (10): 2528-2538

- **Genomic analyses facilitate identification of receptors and signalling pathways for growth differentiation factor 9 and related orphan bone morphogenetic protein/growth differentiation factor ligands** *HUMAN REPRODUCTION UPDATE*
  Mazerbourg, S., Hsueh, A. J.
  2006; 12 (4): 373-383

- **Genomic analyses of the evolution of LGR genes.** *Chang Gung medical journal*
  Luo, C., Hsueh, A. J.
  2006; 29 (1): 2-8

- **Hormonology: a genomic perspective on hormonal research** *JOURNAL OF ENDOCRINOLOGY*
  Hsueh, A. J., Bouchard, P., Ben-Shlomo, I.
  2005; 187 (3): 333-338

- **Obestatin, a peptide encoded by the ghrelin gene, opposes ghrelin’s effects on food intake** *SCIENCE*
  2005; 310 (5750): 996-999

- **Identification of receptors and signaling pathways for orphan bone morphogenetic protein/growth differentiation factor ligands based on genomic analyses** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  Mazerbourg, S., Sangkahl, K., Luo, C. W., Sudo, S., Klein, C., Hsueh, A. J.
• Heterodimeric fly glycoprotein hormone-alpha 2 (GPA2) and glycoprotein hormone-beta 5 (GPB5) activate fly leucine-rich repeat-containing G protein-coupled receptor-1 (DLGR1) and stimulation of human thyrotropin receptors by chimeric fly GPA2 and human GPB5. *Endocrinology*
  Sudo, S., Kuwabara, Y., Park, J. L., Hsu, S. Y., Hsueh, A. J.
  2005; 146 (8): 3596-3604

• Ovarian brain-derived neurotrophic factor (BDNF) promotes the development of oocytes into preimplantation embryos. *Proceedings of the National Academy of Sciences of the United States of America*
  2005; 102 (26): 9206-9211

• Three’s company: Two or more unrelated receptors pair with the same ligand. *Molecular Endocrinology*
  Ben-Shlomo, I., Hsueh, A. J.
  2005; 19 (5): 1097-1109

• Bursicon, the insect cuticle-hardening hormone, is a heterodimeric cystine knot protein that activates G protein-coupled receptor LGR2. *Proceedings of the National Academy of Sciences of the United States of America*
  2005; 102 (8): 2820-2825

• FOXL2 is a transcriptional repressor of enzymes involved in the steroidogenic cascade. *52nd Annual Meeting of the Society-for-Gynecologic-Investigation*
  Pisarska, M. D., Kao, L., Bae, J., Hsueh, A. J.
  ELSEVIER SCIENCE INC.2005: 296A–297A

• Relaxin research in the postgenomic era. *4th International Conference on Relaxin and Related Peptides*
  NEW YORK ACAD SCIENCES.2005: 1–7

• Identification of a stanniocalcin paralog, stanniocalcin-2, in fish and the paracrine actions of stanniocalcin-2 in the mammalian ovary. *Endocrinology*
  Luo, C. W., Pisarska, M. D., Hsueh, A. J.
  2005; 146 (1): 469-476

• Neonatal lethality of LGR5 null mice is associated with ankyloglossia and gastrointestinal distension. *Molecular and Cellular Biology*
  2004; 24 (22): 9736-9743

• Leucine-rich repeat-containing, G protein-coupled receptor 4 null mice exhibit intrauterine growth retardation associated with embryonic and perinatal lethality. *Molecular Endocrinology*
  2004; 18 (9): 2241-2254

• Paracrine regulation of ovarian granulosa cell differentiation by stanniocalcin (STC) 1: Mediation through specific STC1 receptors. *Molecular Endocrinology*
  Luo, C. W., Kawamura, K., Klein, C., Hsueh, A. J.
  2004; 18 (8): 2085-2096

• Forkhead L2 is expressed in the ovary and represses the promoter activity of the steroidogenic acute regulatory gene. *Endocrinology*
  Pisarska, M. D., Bae, J., Klein, C., Hsueh, A. J.
  2004; 145 (7): 3424-3433

• Protein related to DAN and cerberus is a bone morphogenetic protein antagonist that participates in ovarian paracrine regulation. *Journal of Biological Chemistry*
  Sudo, S., Avsian-Kretchmer, O., Wang, L. S., Hsueh, A. J.
  2004; 279 (22): 23134-23141

• Paracrine regulation of mammalian oocyte maturation and male germ cell survival. *Proceedings of the National Academy of Sciences of the United States of America*
  2004; 101 (19): 7323-7328
• Growth differentiation factor-9 signaling is mediated by the type I receptor, activin receptor-like kinase 5. *Molecular Endocrinology*
Mazerbourg, S., Klein, C., Roh, J., Kaivo-Oja, N., Mottershead, D. G., Korchynskyi, O., Ritvos, O., Hsueh, A. J.
2004; 18 (3): 653-665

• Potential mechanism of FOXL2 mutations in premature ovarian failure. *51st Annual Meeting of the Society-for-Gynecologic-Investigation*
Pisarska, M. D., Bae, J., Hsueh, A. J.
ELSEVIER SCIENCE INC.2004: 313A–313A

• Comparative genomic analysis of the eight-membered ring cystine knot-containing bone morphogenetic protein antagonists. *Molecular Endocrinology*
Avsian-Kretchmer, O., Hsueh, A. J.
2004; 18 (1): 1-12

• Paracrine regulation of mammalian oocyte maturation and male germ cell survival. *37th Annual Meeting of the Society-for-the-Study-of-Reproduction*
SOC STUDY REPRODUCTION.2004: 187–187

• Lack of LGR8 gene mutation in Finnish patients with a family history of cryptorchidism. *Reproductive biomedicine online*
2003; 7 (4): 400-406

• Expression and functional analysis of forkhead L2 (FOXL2), the gene involved in premature ovarian failure. *59th Annual Meeting of the American-Society-for-Reproductive-Medicine*
Pisarska, M. D., Bae, J., Hsueh, A. J.
ELSEVIER SCIENCE INC.2003: S28–S28

• Signaling receptome: a genomic and evolutionary perspective of plasma membrane receptors involved in signal transduction. *Science's STKE : signal transduction knowledge environment*
Ben-Shlomo, I., Yu Hsu, S., Rauch, R., Kowalski, H. W., Hsueh, A. J.
2003; 2003 (187): RE9–?

• Activation of the luteinizing hormone receptor in the extracellular domain. *5th International Symposium on Ovarian Function*
Nakabayashi, K., Kudo, M., Hsueh, A. J., Maruo, T.
ELSEVIER IRELAND LTD.2003: 139–44

• Relaxin signaling in reproductive tissues. *5th International Symposium on Ovarian Function*
Hsu, S. Y., Nakabayashi, K., NISHI, S., Kumagai, J., Kudo, M., Bathgate, R. A., Sherwood, O. D., Hsueh, A. J.
ELSEVIER IRELAND LTD.2003: 165–70

• Growth differentiation factor-9 signaling in the ovary. *5th International Symposium on Ovarian Function*
Mazerbourg, S., Hsueh, A. J.
ELSEVIER IRELAND LTD.2003: 31–36

• H3 relaxin is a specific ligand for LGR7 and activates the receptor by interacting with both the ectodomain and the exoloop 2. *Journal of Biological Chemistry*
2003; 278 (10): 7855-7862

• Tankyrase 1 interacts with Mcl-1 proteins and inhibits their regulation of apoptosis. *Journal of Biological Chemistry*
Bae, J. Y., Donijian, I. R., Hsueh, A. J.
2003; 278 (7): 5195-5204

• Growth differentiation factor-9 stimulates inhibin production and activates Smad2 in cultured rat granulosa cells. *Endocrinology*
Roh, J. S., Bondestam, J., Mazerbour, S., Kaivo-Oja, N., Groome, N., Ritvos, O., Hsueh, A. J.
2003; 144 (1): 172-178

• INS/Leydig insulin-like peptide activates the LGR8 receptor important in testis descent. *Journal of Biological Chemistry*
2002; 277 (35): 31283-31286
• Bone morphogenetic protein receptor type II is a receptor for growth differentiation factor-9 *BIOLOGY OF REPRODUCTION*
  Vitt, U. A., Mazerbourg, S., Klein, C., Hsueh, A. J.
  2002; 67 (2): 473-480

• Perspective: The ovarian kaleidoscope database - II. Functional genomic analysis of an organ-specific database *ENDOCRINOLOGY*
  Ben-Shlomo, I., Vitt, U. A., Hsueh, A. J.
  2002; 143 (6): 2041-2044

• Hormonal genomics *ENDOCRINE REVIEWS*
  Leo, C. P., Hsu, S. Y., Hsueh, A. J.
  2002; 23 (3): 369-381

• Thyrostimulin, a heterodimer of two new human glycoprotein hormone subunits, activates the thyroid-stimulating hormone receptor *JOURNAL OF CLINICAL INVESTIGATION*
  Nakabayashi, K., Matsumi, H., Bhalla, A., Bae, J., Mosselman, S., Hsu, S. Y., Hsueh, A. J.
  2002; 109 (11): 1445-1452

• The ectodomain of the luteinizing hormone receptor interacts with exoloop 2 to constrain the transmembrane region - Studies using chimeric human and fly receptors *JOURNAL OF BIOLOGICAL CHEMISTRY*
  NISHI, S., Nakabayashi, K., Kobilka, B., Hsueh, A. J.
  2002; 277 (6): 3958-3964

• Activation of orphan receptors by the hormone relaxin *SCIENCE*
  Hsu, S. Y., Nakabayashi, K., NISHI, S., Kumagai, J., Kudo, M., Sherwood, O. D., Hsueh, A. J.
  2002; 295 (5555): 671-674

• Stage-dependent role of growth differentiation factor-9 in ovarian follicle development *International Conference on Reproductive Competence: Pathophysiology and Therapeutic Intervention*
  Vitt, U. A., Hsueh, A. J.
  ELSEVIER IRELAND LTD 2002: 211–17

• Impact of the genomic revolution on reproductive sciences.
  Hsueh, A. J., Hsu, S. Y., Nakabayashi, K., Vitt, U., Ben-Shlomo, I., Leo, C.
  SOC STUDY REPRODUCTION 2002: 71–72

• Ovarian follicle development: the role of oocyte GDF-9 and GDF-9B/BMP-15 *17th World Congress on Fertility and Sterility*
  Hsueh, A. J., Roh, J. S.
  PARTHENON PUBLISHING GROUP LTD 2002: 331–336

• The impact of the genomic revolution on gynecological endocrinology *8th World Congress of Gynecological Endocrinology*
  Wasson, K. M., Hsueh, A. J.
  PARTHENON PUBLISHING GROUP LTD 2002: 1–4

• Stage-dependent role of growth differentiation factor-9 in ovarian follicle development *MOLECULAR AND CELLULAR ENDOCRINOLOGY*
  Vitt, U. A., Hsueh, A. J.
  2001; 183 (1-2): 171-177

• Underphosphorylated BAD interacts with diverse antiapoptotic Bcl-2 family proteins to regulate apoptosis *APOPTOSIS*
  Bae, J., Hsu, S. Y., Leo, C. P., Zell, K., Hsueh, A. J.
  2001; 6 (5): 319-330

• DNA array analysis of changes in preovulatory gene expression in the rat ovary *BIOLOGY OF REPRODUCTION*
  Leo, C. P., Pisarska, M. D., Hsueh, A. J.
  2001; 65 (1): 269-276

• Human stresscopin and stresscopin-related peptide are selective ligands for the type 2 corticotropin-releasing hormone receptor *NATURE MEDICINE*
  Hsu, S. Y., Hsueh, A. J.
  2001; 7 (5): 605-611

• Evolution and classification of cystine knot-containing hormones and related extracellular signaling molecules *MOLECULAR ENDOCRINOLOGY*
• Mullerian inhibitory substance induces growth of rat preantral ovarian follicles *BIOLOGY OF REPRODUCTION*
  2001; 64 (1): 293-298

• Impact of genomic revolution on reproductive medicine *53rd Annual Congress of the Japan-Society-of-Obstetrics-and-Gynecology*
  Hsueh, A. J., Pisarska, M. D.
  MEDIMOND S R L. 2001: 191–199

• Ovarian gene database *Workshop on the Ovary - Genesis, Function, and Failure*
  Wasson, K. M., Hsueh, A. J.
  ELSEVIER SCIENCE INC. 2001: S37–S39

• Characterization of two fly LGR (leucine-rich repeat-containing, G protein-coupled receptor) proteins homologous to vertebrate glycoprotein hormone receptors: Constitutive activation of wild-type fly LGR1 but not LGR2 in transfected mammalian cells *ENDOCRINOLOGY*
  NISHI, S., Hsu, S. Y., Zell, K., Hsueh, A. J.
  2000; 141 (11): 4081-4090

• In vivo treatment with GDF-9 stimulates primordial and primary follicle progression and theca cell marker CYP17 in ovaries of immature rats *ENDOCRINOLOGY*
  2000; 141 (10): 3814-3820

• Activation of the luteinizing hormone receptor following substitution of Ser-277 with selective hydrophobic residues in the ectodomain hinge region *JOURNAL OF BIOLOGICAL CHEMISTRY*
  Nakabayashi, K., Kudo, M., Kobilka, B., Hsueh, A. W.
  2000; 275 (39): 30264-30271

• The Ovarian Kaleidoscope database: An online resource for the ovarian research community *ENDOCRINOLOGY*
  Leo, C. P., Vitt, U. A., Hsueh, A. J.
  2000; 141 (9): 3052-3054

• MCL-1S, a splicing variant of the antiapoptotic BCL-2 family member MCL-1, encodes a proapoptotic protein possessing only the BH3 domain *JOURNAL OF BIOLOGICAL CHEMISTRY*
  Bae, J., Leo, C. P., Hsu, S. Y., Hsueh, A. J.
  2000; 275 (33): 25255-25261

• The three subfamilies of leucine-rich repeat-containing G protein-coupled receptors (LGR): Identification of LGR6 and LGR7 and the signaling mechanism for LGR7 *MOLECULAR ENDOCRINOLOGY*
  Hsu, S. Y., Kudo, M., Chen, T., Nakabayashi, K., Bhalla, A., van der Spek, P. J., van Duin, M., Hsueh, A. J.
  2000; 14 (8): 1257-1271

• Hormonal regulation of early follicle development in the rat ovary *Workshop on Early Folliculogenesis and Oocyte Development - Basic and Clinical Aspects*
  Hsueh, A. J., Mcgee, E. A., Hayashi, M., Hsu, S. Y.
  ELSEVIER IRELAND LTD. 2000: 95–100

• Discovering new hormones, receptors, and signaling mediators in the genomic era *MOLECULAR ENDOCRINOLOGY*
  Hsu, S. Y., Hsueh, A. J.
  2000; 14 (5): 594-604

• Tissue-specific Bcl-2 protein partners in apoptosis: An ovarian paradigm *PHYSIOLOGICAL REVIEWS*
  Hsu, S. Y., Hsueh, A. J.
  2000; 80 (2): 593-614

• Initial and cyclic recruitment of ovarian follicles *ENDOCRINE REVIEWS*
  Mcgee, E. A., Hsueh, A. J.
  2000; 21 (2): 200-214
• Growth differentiation factor-9 stimulates proliferation but suppresses the follicle-stimulating hormone-induced differentiation of cultured granulosa cells from small antral and preovulatory rat follicles. *Biology of Reproduction*
  Vitt, U. A., Hayashi, M., Klein, C., Hsueh, A. J.
  2000; 62 (2): 370-377

• The nematode leucine-rich repeat-containing, G protein-coupled receptor (LGR) protein homologous to vertebrate gonadotropin and thyrotropin receptors is constitutively activated in mammalian cells. *Molecular Endocrinology*
  Kudo, M., Chen, T., Nakabayashi, K., Hsu, S. Y., Hsueh, A. J.
  2000; 14 (2): 272-284

• The potential role of the oocyte in follicle development and ovarian aging. *10th Reinier De Graaf Symposium*
  Vitt, U., Hayashi, M., Hsueh, A. J.
  PARTHENON PUBLISHING GROUP LTD. 2000: 197–206

• Characterization of the antiapoptotic Bcl-2 family member myeloid cell leukemia-1 (Mcl-1) and the stimulation of its message by gonadotropins in the rat ovary. *Endocrinology*
  Leo, C. P., Hsu, S. Y., Chun, S. Y., Bac, H. W., Hsueh, A. J.
  1999; 140 (12): 5469-5477

• Keratinocyte growth factor promotes the survival, growth, and differentiation of preantral ovarian follicles. *Fertility and Sterility*
  1999; 71 (4): 732-738

• Recombinant growth differentiation factor-9 (GDF-9) enhances growth and differentiation of cultured early ovarian follicles. *Endocrinology*
  Hayashi, M., Mcgee, E. A., Min, G., Klein, C., Rose, U. M., van Duin, M., Hsueh, A. J.
  1999; 140 (3): 1236-1244

• Restricted expression of WT1 messenger ribonucleic acid in immature ovarian follicles: Uniformity in mammalian and avian species and maintenance during reproductive senescence. *Biology of Reproduction*
  1999; 60 (2): 365-373

• Characterization of two LGR genes homologous to gonadotropin and thyrotropin receptors with extracellular leucine-rich repeats and a G protein-coupled, seven-transmembrane region. *Molecular Endocrinology*
  Hsu, S. Y., Liang, S. G., Hsueh, A. J.
  1998; 12 (12): 1830-1845

• DEFT, a novel death effector domain-containing molecule predominantly expressed in testicular germ cells. *Endocrinology*
  Leo, C. P., Hsu, S. Y., Mcgee, E. A., Salanova, M., Hsueh, A. J.
  1998; 139 (12): 4839-4848

• A splicing variant of the Bcl-2 member Bok with a truncated BH3 domain induces apoptosis but does not dimerize with antiapoptotic Bcl-2 proteins in vitro. *Journal of Biological Chemistry*
  Hsu, S. Y., Hsueh, A. J.
  1998; 273 (46): 30139-30146

• Characterization of 2 LGR genes homologous to gonadotropin and thyrotropin receptors with extracellular leucine-rich repeats (LRR) and a 7-transmembrane region. *American Society for Cell Biology*
  Hsu, S. Y., Liang, S., Hsueh, A. J.
  1998: 215A–215A

• Intracellular mechanisms of ovarian cell apoptosis. *Xth International Workshop on Development and Function of the Reproductive Organs - Genetic and Endocrine Basis of Gonadal Failure*
  Hsu, S. Y., Hsueh, A. J.

• BOD (Bcl-2-related ovarian death gene) is an ovarian BH3 domain-containing proapoptotic Bcl-2 protein capable of dimerization with diverse antiapoptotic Bcl-2 members. *Molecular Endocrinology*
  Hsu, S. Y., Lin, P., Hsueh, A. J.
  1998; 12 (9): 1432-1440
• Paracrine mechanisms of ovarian follicle apoptosis Workshop on Paracrine Mechanisms in Female Reproduction
  Chun, S. Y., Hsueh, A. J.
  ELSEVIER IRELAND LTD. 1998: 63–75

• Cell death and survival during ovarian follicle development Ares-Serono Foundation Workshop on Developmental Endocrinology - Roles of Genes and Growth Factors During Embryogenesis and Development of Endocrine Structures
  Mcgee, E. A., Hsu, S. Y., Kaipia, A., Hsueh, A. J.
  ELSEVIER IRELAND LTD. 1998: 15–18

• Soluble ecto-domain mutant of thyrotropin (TSH) receptor incapable of binding TSH neutralizes the action of thyroid-stimulating antibodies from graves' patients ENDOCRINOLOGY
  Osuga, Y., Liang, S. G., Dallas, J. S., Wang, C., Hsueh, A. J.
  1998; 139 (2): 671-676

• DEFT, a novel death effector domain-containing molecule with predominant testicular expression.
  Leo, C. P., Hsu, S. Y., Hsueh, A. J.
  SOC STUDY REPRODUCTION 1998: 74–75

• Expression and function of a proapoptotic Bcl-2 family member Bcl-XL/Bcl-2-associated death promoter (BAD) in rat ovary ENDOCRINOLOGY
  Kaipia, A., Hsu, S. Y., Hsueh, A. J.
  1997; 138 (12): 5497-5504

• Bok is a pro-apoptotic Bcl-2 protein with restricted expression in reproductive tissues and heterodimerizes with selective anti-apoptotic Bcl-2 family members PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA
  Hsu, S. Y., Kaipia, A., McGee, E., Lomeli, M., Hsueh, A. J.
  1997; 94 (23): 12401-12406

• Interference of BAD (Bcl-xL/Bcl-2-associated death promoter)-induced apoptosis in mammalian cells by 14-3-3 isoforms and P11 MOLECULAR ENDOCRINOLOGY
  Hsu, S. Y., Kaipia, A., Zhu, L., Hsueh, A. J.
  1997; 11 (12): 1858-1867

• Follicle-stimulating hormone enhances the development of preantral follicles in juvenile rats BIOLOGY OF REPRODUCTION
  1997; 57 (5): 990-998

• Co-expression of defective luteinizing hormone receptor fragments partially reconstitutes ligand-induced signal generation JOURNAL OF BIOLOGICAL CHEMISTRY
  Osuga, Y., Hayashi, M., Kudo, M., Conti, M., Kobilka, B., Hsueh, A. J.
  1997; 272 (40): 25006-25012

• Derivation of functional antagonists using N-terminal extracellular domain of gonadotropin and thyrotropin receptors MOLECULAR ENDOCRINOLOGY
  Osuga, Y., Kudo, M., Kaipia, A., Kobilka, B., Hsueh, A. J.
  1997; 11 (11): 1659-1668

• Interference of BAD-induced apoptosis in mammalian cells by 14-3-3 isoforms and P11 FEDERATION AMER SOC EXP BIOL 1997: A1241–A1241

• Hormonal regulation of apoptosis - An ovarian perspective TRENDS IN ENDOCRINOLOGY AND METABOLISM
  Hsu, S. Y., Hsueh, A. J.
  1997; 8 (5): 207-213

• Preantral ovarian follicles in serum-free culture: Suppression of apoptosis after activation of the cyclic guanosine 3',5'-monophosphate pathway and stimulation of growth and differentiation by follicle-stimulating hormone ENDOCRINOLOGY
  1997; 138 (6): 2417-2424

• Telomerase activity in female and male rat germ cells undergoing meiosis and in early embryos BIOLOGY OF REPRODUCTION
  EISENHAUER, K. M., Gerstein, R. M., Chiu, C. P., Conti, M., Hsueh, A. J.
Regulation of ovarian follicle atresia. ANNUAL REVIEW OF PHYSIOLOGY
Kaipia, A., Hsueh, A. J.
1997; 56 (5): 1120-1125

Conversion of heterodimeric gonadotropins to genetically linked single chains: new approaches to structure-activity relationships and analog design. IX Reiner-de-Graaf Symposium on FSH Action and Intraovarian Regulation
Boime, I., BENMENAHEM, D., Kudo, M., Sugahara, T., Sato, A., Hsueh, A. J.
PARTHENON PUBLISHING GROUP LTD.1997: 3–10

The IX Reiner De Graaf Lecture - Hormone regulation of apoptotic cell death during ovarian follicle atresia. IX Reiner-de-Graaf Symposium on FSH Action and Intraovarian Regulation
Chun, S. Y., Kaipia, A., Hsueh, A. J.
PARTHENON PUBLISHING GROUP LTD.1997: 221–231

Expression of biologically active fusion genes encoding the common alpha subunit and either the CG beta or FSH beta subunits: Role of a linker sequence. International Conference on Gonadotropins and Their Receptors
ELSEVIER IRELAND LTD.1996: 71–77

Targeted overexpression of Bcl-2 in ovaries of transgenic mice leads to decreased follicle apoptosis, enhanced folliculogenesis, and increased germ cell tumorigenesis. ENDOCRINOLOGY
Hsu, S. Y., LAI, R. J., Finegold, M., Hsueh, A. J.
1996; 137 (11): 4837-4843

Tumor necrosis factor-alpha and its second messenger, ceramide, stimulate apoptosis in cultured ovarian follicles. ENDOCRINOLOGY
Kaipia, A., Chun, S. Y., Eisenhauer, K., Hsueh, A. J.
1996; 137 (11): 4864-4870

Oocyte maturation involves compartmentalization and opposing changes of cAMP levels in follicular somatic and germ cells: Studies using selective phosphodiesterase inhibitors. DEVELOPMENTAL BIOLOGY
Tsafiri, A., Chun, S. Y., Zhang, R., Hsueh, A. J., Conti, M.
1996; 178 (2): 393-402

Transmembrane regions V and VI of the human luteinizing hormone receptor are required for constitutive activation by a mutation in the third intracellular loop. JOURNAL OF BIOLOGICAL CHEMISTRY
Kudo, M., Osuga, Y., Kobilka, B. K., Hsueh, A. J.
1996; 271 (37): 22470-22478

The C-terminal third of the human luteinizing hormone (LH) receptor is important for inositol phosphate release: Analysis using chimeric human LH/ follicle-stimulating hormone receptors. MOLECULAR ENDOCRINOLOGY
Hirsch, B., Kudo, M., Naro, F., Conti, M., Hsueh, A. J.
1996; 10 (9): 1127-1137

Hormonal regulation of apoptosis in early antral follicles: Follicle-stimulating hormone as a major survival factor. ENDOCRINOLOGY
1996; 137 (4): 1447-1456

Gonadal cell apoptosis. 1995 Conference on Recent Progress in Hormone Research
Hsueh, A. J., Eisenhauer, K., Chun, S. Y., Hsu, S. Y., Billig, H.
ENDOCRINE SOC.1996: 433–456

Synthesis of genetically fused single chain analog of human chorionic gonadotropin: Implications for drug design and structure-function relationships. Symposium on the Ovary - Regulation, Dysfunction and Treatment
Boime, I., Sugahara, T., Pixley, M. R., Perlas, E., Hsueh, A. J.
ELSEVIER SCIENCE PUBL B V.1996: 43–50

Mechanisms of atresia: The hormonal control of apoptosis. Symposium on the Ovary - Regulation, Dysfunction and Treatment
EISENHAUER, K. M., Chun, S. Y., Minami, S., Billig, H., Hsueh, A. J.
ELSEVIER SCIENCE PUBL B V.1996: 103–112
• DIFFERENT 5'-FLANKING REGIONS OF THE INHIBIN-ALPHA GENE TARGET TRANSGENES TO THE GONAD AND ADRENAL IN AN AGE-DEPENDENT MANNER IN TRANSGENIC MICE. *Endocrinology*
  Hsu, S. Y., Lai, R. J., Nanuel, D., Hsueh, A. J.
  1995; 136 (12): 5577-5586

• WILMS-TUMOR PROTEIN WT1 AS AN OVARIAN TRANSCRIPTION FACTOR - DECREASES IN EXPRESSION DURING FOLLICLE DEVELOPMENT AND REPRESSION OF INHIBIN-ALPHA GENE PROMOTER. *Molecular Endocrinology*
  1995; 9 (10): 1356-1366

• MISSENSE MUTATIONS IN EXON-10 AND EXON-11 OF THE HUMAN LUTEINIZING-HORMONE RECEPTOR GENE ARE ASSOCIATED WITH LEYDIG-CELL HYPOPLASIA
  Cell Press. 1995: 1252–52

• DESIGNER CONTRACEPTIVE PILLS. *Human Reproduction*
  Hsueh, A. J.

• INTERLEUKIN-1-BETA SUPPRESSES APOPTOSIS IN RAT OVARIAN FOLLICLES BY INCREASING NITRIC-OXIDE PRODUCTION. *Endocrinology*
  1995; 136 (7): 3120-3127

• GROWTH-HORMONE SUPPRESSION OF APOPTOSIS IN PREOVULATORY RAT FOLLICLES AND PARTIAL NEUTRALIZATION BY INSULIN-LIKE GROWTH-FACTOR BINDING-PROTEIN. *Biology of Reproduction*
  Eisenhauer, K. M., Chun, S. Y., Billig, H., Hsueh, A. J.
  1995; 53 (1): 13-20

• GENETIC-BASIS OF HUMAN REPRODUCTIVE ENDOCRINE DISORDERS. *Human Reproduction*
  Fauser, B. C., Hsueh, A. J.
  1995; 10 (4): 826-846

• APOPTOSIS IN TESTIS GERM-CELLS - DEVELOPMENTAL-CHANGES IN GONADOTROPIN DEPENDENCE AND LOCALIZATION TO SELECTIVE TUBULE STAGES. *Endocrinology*
  1995; 136 (1): 5-12

• FUSING THE CARBOXY-TERMINAL PEPTIDE OF THE CHORIONIC-GONADOTROPIN (CG) BETA-SUBUNIT TO THE COMMON ALPHA-SUBUNIT - RETENTION OF O-LINKED GLYCOSYLATION AND ENHANCED IN-VIVO BIOACTIVITY OF CHIMERIC HUMAN CG. *Molecular Endocrinology*
  1995; 9 (1): 54-63

• HORMONAL-REGULATION OF APOPTOSIS IS DEPENDENT ON THE STAGE OF FOLLICLE DEVELOPMENT - FSH, LH, AND IGF-I AS SURVIVAL FACTORS FOR EARLY ANTRAL FOLLICLES
  Eisenhauer, K. M., Chun, S. Y., Minami, S., Hsueh, A. J.

• SUPPRESSION OF FOLLICLE ATRESIA IN TRANSGENIC MICE OVER-EXPRESSING HUMAN BCL-2 PROTEIN IN THE OVARY
  Hsu, S. Y., Lai, R. J., Chun, S. Y., Hsueh, A. J.

• OVARIAN FOLLICLE ATRESIA - A HORMONALLY CONTROLLED APOPTOTIC PROCESS. *Endocrine Reviews*
  Hsueh, A. J., Billig, H., Tsafiriti, A.
  1994; 15 (6): 707-724

• PHOTOPERIOD REGulates TESTIS CELL APOPTOSIS IN DJUNGRARIAN HAMSTERS. *Biology of Reproduction*
  Furuta, I., Porkkaheiskanen, T., Scarbrough, K., Tapanainen, J., Turek, F. W., Hsueh, A. J.
  1994; 51 (6): 1315-1321
• EXPERIMENTALLY-INDUCED CRYPTORCHIDISM INCREASES APOPTOSIS IN RAT TESTIS  
  Shikone, T., Billig, H., Hsueh, A. J.  
  1994; 51 (5): 865-872

• GONADOTROPIN SUPPRESSION OF APOPTOSIS IN CULTURED PREOVULATORY FOLLICLES - MEDIATORY ROLE OF ENDOGENOUS INSULIN-LIKE GROWTH-FACTOR-I  
  Chun, S. Y., Billig, H., Tilly, J. L., Furuta, I., Tsafiriri, A., Hsueh, A. J.  
  1994; 135 (5): 1845-1853

• CHARACTERIZATION OF GONADAL SEX CORD-STROMAL TUMOR-CELL LINES FROM INHIBIN-ALPHA AND P53-DEFICIENT MICE - THE ROLE OF ACTIVIN AS AN AUTOCRINE GROWTH-FACTOR  
  1994; 8 (8): 983-995

• FOLLICLE-STIMULATING-HORMONE RECEPTOR EXPRESSION IN THE RAT OVARY - INCREASES DURING PREPUBERTAL DEVELOPMENT AND REGULATION BY THE OPPOSING ACTIONS OF TRANSFORMING GROWTH FACTORS-BETA AND FACTORS-ALPHA  
  Dunkel, L., Tilly, J. L., Shikone, T., Nishimori, K., Hsueh, A. J.  
  1994; 50 (4): 940-948

• GONADOTROPIN-RELEASING-HORMONE DIRECTLY INDUCES APOPTOTIC CELL-DEATH IN THE RAT OVARY - BIOCHEMICAL AND IN-SITU DETECTION OF DEOXYRIBONUCLEIC-ACID FRAGMENTATION IN GRANULOSA-CELLS  
  Billig, H., Furuta, I., Hsueh, A. J.  
  1994; 134 (1): 245-252

• GONADOTROPIN CONTROL OF FOLLICLE OVULATION, LUTEINIZATION AND ATRESIA  
  Tapanainen, J. S., Billig, H., Furuta, I., Hsueh, A. J.  
  VIIIth World Congress on In Vitro Fertilization and Alternate Assisted Reproduction  

• STRUCTURE-FUNCTION STUDIES OF GONADOTROPINS USING SITE-DIRECTED MUTAGENESIS AND GENE-TRANSFER - DESIGN OF A LONG-ACTING GONADOTROPIN AGONIST  
  Boime, I., Fares, F., Furuhashi, M., LAPOLT, P. D., Nishimori, K., Shikone, T., Sugahara, T., Hsueh, A. J.  
  ELSEVIER SCIENCE PUB B V. 1994: 177–184

• LUMINESCENCE LUTEINIZING-HORMONE CHORIOGONADOTROPIN (LH CG) BIOASSAY - MEASUREMENT OF SERUM BIOACTIVE LH CG DURING EARLY-PREGNANCY IN HUMAN AND MACAQUE  
  1993; 49 (6): 1310-1316

• INDUCTION OF OVARIAN FOLLICLE LUTEINIZATION BY RECOMBINANT FOLLICLE-STIMULATING-HORMONE  
  Tapanainen, J. S., LaPolt, P. S., Perlas, E., Hsueh, A. J.  
  1993; 133 (6): 2875-2880

• ESTROGENS INHIBIT AND ANDROGENS ENHANCE OVARIAN GRANULOSA-CELL APOPTOSIS  
  Billig, H., Furuta, I., Hsueh, A. J.  
  1993; 133 (5): 2204-2212

• HORMONAL-CONTROL OF APOPTOTIC CELL-DEATH IN THE TESTIS - GONADOTROPINS AND ANDROGENS AS TESTICULAR CELL-SURVIVAL FACTORS  
  Tapanainen, J. S., Tilly, J. L., Vihko, K. K., Hsueh, A. J.  
  1993; 7 (5): 643-650

• MICROSCALE AUTORADIOGRAPHIC METHOD FOR THE QUALITATIVE AND QUANTITATIVE-ANALYSIS OF APOPTOTIC DNA FRAGMENTATION  
  Tilly, J. L., Hsueh, A. J.  
  1993; 154 (3): 519-526

• IDENTIFICATION OF A NOVEL TUMOR SUPPRESSOR VIA GENE TARGETING IN THE MOUSE  
  FEDERATION AMER SOC EXP BIOL. 1993: A54–A54
DEGLYCOSYLATED HUMAN CHORIONIC-GONADOTROPIN (HCG) ANTAGONIZES HCG STIMULATION OF 3’,5’-CYCLIC ADENOSINE-MONOPHOSPHATE ACCUMULATION THROUGH A NONCOMPETITIVE INTERACTION WITH RECOMBINANT HUMAN LUTEINIZING-HORMONE RECEPTORS

Dunkel, L., Jia, X. C., Nishimori, K., Boime, I., Hsueh, A. J.

1993; 132 (2): 763-769

STRUCTURE FUNCTION STUDIES OF GONADOTROPINS USING SITE-DIRECTED MUTAGENESIS AND GENE TRANSFER - DESIGN OF A LONG-ACTING FOLLITROPIN AGONIST

Boime, I., Fares, F., LAPOLT, P. A., Nishimori, K., Perlas, E., Hsueh, A. J.

PARTHENON PUBLISHING GROUP LTD.1993: 347–356

INTRAOVARIAN SIGNALING MECHANISMS AND CONTROL

Vihko, K. K., Piquette, G. N., Hsueh, A. J.

RAVEN PRESS.1993: 253–261

ENHANCED STIMULATION OF FOLLICLE MATURATION AND OVULATORY POTENTIAL BY LONG-ACTING FOLLICLE-STIMULATING-HORMONE AGONISTS WITH EXTENDED CARBOXYL-TERMINAL PEPTIDES


1992; 131 (6): 2514-2520

EPIDERMAL GROWTH-FACTOR AND BASIC FIBROBLAST GROWTH-FACTOR SUPPRESS THE SPONTANEOUS ONSET OF APOPTOSIS IN CULTURED RAT OVARIAN GRANULOSA-CELLS AND FOLLICLES BY A TYROSINE KINASE-DEPENDENT MECHANISM

Tilly, J. L., Billig, H., KOWALSKI, K. I., Hsueh, A. J.


APOPTOSIS IN ATRETIC OVARIAN FOLLICLES IS ASSOCIATED WITH SELECTIVE DECREASES IN MESSENGER-RIBONUCLEIC-ACID TRANSCRIPTS FOR GONADOTROPIN RECEPTORS AND CYTOCHROME P450 AROMATASE

Tilly, J. L., KOWALSKI, K. I., Schomberg, D. W., Hsueh, A. J.

1992; 131 (4): 1670-1676

EXPRESSION OF RECOMBINANT HUMAN FOLLICLE-STIMULATING-HORMONE RECEPTOR - SPECIES-SPECIFIC LIGAND-BINDING, SIGNAL TRANSDUCTION, AND IDENTIFICATION OF MULTIPLE OVARIAN MESSENGER-RIBONUCLEIC-ACID TRANSCRIPTS


1992; 131 (2): 799-806

CHARACTERIZATION OF MOUSE INHIBIN-ALPHA GENE AND ITS PROMOTER

SU, J. G., Hsueh, A. J.

1992; 186 (1): 293-300

MOLECULAR-BASIS OF GONADOTROPIN RECEPTOR REGULATION

Hsueh, A. J., LaPolt, P. S.

1992; 3 (5): 164-170

EXPRESSION OF TESTICULAR MESSENGER-RIBONUCLEIC-ACID FOR LUTEINIZING-HORMONE RECEPTOR IN THE RAT - DEVELOPMENTAL REGULATION OF MULTIPLE TRANSCRIPTS DURING POSTNATAL LIFE

Vihko, K. K., Nishimori, K., LaPolt, P. S., Hsueh, A. J.

1992; 46 (6): 1016-1020

HORMONAL-REGULATION OF FOLLICLE-STIMULATING-HORMONE RECEPTOR MESSENGER-RIBONUCLEIC-ACID LEVELS IN CULTURED RAT GRANULOSA-CELLS

Tilly, J. L., LaPolt, P. S., Hsueh, A. J.

1992; 130 (3): 1296-1302

GONADOTROPIN-INDUCED UP-REGULATION AND DOWN-REGULATION OF OVARIAN FOLLICLE-STIMULATING-HORMONE (FSH) RECEPTOR GENE-EXPRESSION IN IMMATURE RATS - EFFECTS OF PREGNANT MARES SERUM GONADOTROPIN, HUMAN CHORIONIC-GONADOTROPIN, AND RECOMBINANT FSH

LaPolt, P. S., Tilly, J. L., Aihara, T., Nishimori, K., Hsueh, A. J.

1992; 130 (3): 1289-1295
• APOPTOSIS AS THE BASIS OF OVARIAN FOLLICULAR ATRESIA  9TH WORKSHOP ON THE DEVELOPMENT AND FUNCTION OF REPRODUCTIVE ORGANS
Tilly, J. L., Hsueh, A. J.
RAVEN PRESS.1992: 157–165

• Molecular basis of inhibin production and action. Molecular and cellular neurosciences
LaPolt, P. S., Hsueh, A. J.
1991; 2 (6): 449-463

• INVOLVEMENT OF APOPTOSIS IN OVARIAN FOLLICULAR ATRESIA AND POSTOVULATORY REGRESSION ENDOCRINOLOGY
Tilly, J. L., KOWALSKI, K. I., Johnson, A. L., Hsueh, A. J.
1991; 129 (5): 2799-2801

• STIMULATORY EFFECTS OF RECOMBINANT FOLLICLE-STIMULATING-HORMONE ON LEYDIG-CELL FUNCTION AND SPERMATOGENESIS IN IMMATURE HYPOPHYSECTOMIZED RATS ENDOCRINOLOGY
Vihko, K. K., LaPolt, P. S., Nishimori, K., Hsueh, A. J.
1991; 129 (4): 1926-1932

• THE BIOLOGICAL ROLE OF THE CARBOXYL-TERMINAL EXTENSION OF HUMAN CHORIONIC-GONADOTROPIN BETA-SUBUNIT ENDOCRINOLOGY
1990; 126 (1): 376-383

• HORMONE REGULATION OF TISSUE-TYPE PLASMINOGEN-ACTIVATOR AND PLASMINOGEN-ACTIVATOR INHIBITOR TYPE-1 GENE-EXPRESSION IN THE OVARY INTERNATIONAL SYMP ON MAJOR ADVANCES IN FEMALE REPRODUCTION
RAVEN PRESS.1990: 77–84

• EXPRESSION OF RECOMBINANT HUMAN FSH AND LH IN MAMMALIAN-CELLS - A SOURCE OF POTENTIAL AGONISTS AND ANTAGONISTS FOR CONTROLLING FERTILITY 7TH REINER DE GRAAF SYMP : FROM OVULATION TO IMPLANTATION
Boime, I., Keene, J., Matzuk, M. M., LaPolt, P., Hsueh, A. J.
ELSEVIER SCIENCE PUBL B V.1990: 23–34

• GRANULOSA-CELL AROMATASE BIOASSAY - CHANGES OF BIOACTIVE FSH-LEVELS IN THE FEMALE INTERNATIONAL SYMP OF LA-
FONDATION-DE-RECHERCHE-EN-HORMONOLOGIE, : RECENT ADVANCES IN GONADOTROPSINS
Fauser, B. C., SOTO, D., Czekala, N. M., Hsueh, A. J.
PERGAMON-ELSEVIER SCIENCE LTD.1989: 721–26

• TRANSFORMING GROWTH-FACTOR-BETA INHIBITS THE LH-INDUCED MATURATION OF RAT OOCYTES 7TH OVARIAN WORKSHOP ON PARACRINE COMMUNICATION IN THE OVARY, ONTOGENESIS AND GROWTH FACTORS
Tsafiriri, A., Hsueh, A. J.
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1989: 209–212

• BIOASSAYS OF GONADOTROPINS - BACKGROUND AND CLINICAL-APPLICATIONS SYMP ON STRUCTURE-FUNCTION RELATIONSHIP OF GONADOTROPSINS
Fauser, B. C., Hsueh, A. J.
RAVEN PRESS.1989: 123–136

• GRANULOSA-CELLS AS HORMONE TARGETS - THE ROLE OF BIOLOGICALLY-ACTIVE FOLLICLE-STIMULATING-HORMONE IN REPRODUCTION 1988 LAURENTIAN HORMONE CONF : RECENT PROGRESS IN HORMONE RESEARCH
ACADEMIC PRESS INC.1989: 209–277

• FIBROBLAST GROWTH-FACTORS AS LOCAL MEDIATORS OF GONADAL-FUNCTION 7TH OVARIAN WORKSHOP ON PARACRINE COMMUNICATION IN THE OVARY, ONTOGENESIS AND GROWTH FACTORS
PLENUM PRESS DIV PLENUM PUBLISHING CORP.1989: 151–160

• GROWTH-FACTORS - INTRAGONADAL REGULATION OF DIFFERENTIATED FUNCTIONS 8TH INTERNATIONAL CONGRESS OF ENDOCRINOLOGY
Fauser, B. C., Hsueh, A. J.