

MATS BRÄNNSTRÖM (date of birth 22 January 1958)

Medical school degree

Göteborg University 1985

Doctoral degree

1988, Physiology, Göteborg University. Title of thesis: "MECHANISMS OF OVULATION: studies using the in vitro perfused ovary"

Postdoctoral work

Postdoc fellowship, University Adelaide, Australia 1991-1993

Swedish Research Council - transition grant 1996-1998

Postdoc GYna-Onc Fellowship, Royal Adelaide Hospital, Australia 1999

Qualification as Associate Professor

Associate Professor in Physiology, Göteborg University, 1989

Associate Professor in Obstetrics and Gynecology, Göteborg University, 1997

Current position

Professor in Obstetrics and Gynecology, Göteborg University 2003 - ongoing

Previous professor position

Professor of Obstetrics and Gynecology, Uppsala University 2001-2002

Main supervisor for completed PhD and thesis area

- Dr. Ulf Zackrisson, PhD 1997 (ovulation)
- Dr. Masato Mikuni, PhD 1999 (ovulation)
- Dr. Barbro Friden, PhD 1999 (corpus luteum)
- Dr. Eva Runesson, PhD 2000 (ovulation)
- Dr. Karin Ivarsson, PhD 2000 (ovarian cancer)
- Dr. Anders Enskog, PhD 2000 (OHSS)
- Dr. Marita Pall, PhD 2000 (ovulation)
- Dr. Markus Matousek, PhD 2001 (ovulation)
- Dr. Ken Mitsube, PhD 2003 (ovulation)
- Dr. Randa Racho El-Akouri, PhD 2003 (uterus transplantation)
- Dr. Pernilla Dahm-Kähler PhD 2006 (ovulation)
- Dr. Anna Karin Lind PhD 2006 (ovulation)
- Dr. Caiza A Wranning PhD 2007 (uterus transplantation)
- Dr. Klaus Groth PhD 2009 (uterus transplantation)

Main supervisor for 7 ongoing PhD projects in the areas of uterus transplantation, ovarian cryopreservation, ovulation, prophylactic oophorectomy, PCOS

Publications - Mats Brännström

Research articles

1. Törnell J, Brännström M, Hillensjö T. Different effects of cyclic nucleotide derivatives upon the rat oocyte-complex in vitro. Acta Physiol Scand 1984 122:507-513
2. Hillensjö T, Brännström M, Chari S, Daume E, Magnusson C, Nilsson L, Sjögren A, Törnell J. Oocyte maturation as regulated by follicular factors. Ann NY Acad Sci 1985 422:73-79
3. Brännström M, Törnell J, Chari S, Hillensjö T. Inhibition of rat oocyte meiosis in vitro: interaction between cAMP derivatives and a human follicular fluid factor. Exp Clin Endocrinol 1986 5:69-73

4. Brännström M, Johansson BM, Sogn J, Janson PO. Characterization of an in vitro perfused rat ovary model: ovulation rate, oocyte maturation, steroidogenesis and influence of PMSG priming. *Acta Physiol Scand* 1987 130:107-114
5. Sogn JH, Curry Jr TE, Brännström M, LeMaire WJ, Koos RD, Papkoff H, Janson PO. Inhibition of follicle-stimulating hormone-induced ovulation by indomethacin in the perfused rat ovary. *Biol Reprod* 1987 36:536-542
6. Brännström M, Koos RD, LeMaire WJ, Janson PO. Cyclic adenosine 3',5'-monophosphate-induced ovulation in the perfused rat ovary and its mediation by prostaglandins. *Biol Reprod* 1987 37:1047-1053
7. Schmidt G, Ahrén K, Brännström M, Kannisto P, Owman C, Sjöberg NO, Tenenbaum A. Histamine stimulates progesterone synthesis and cyclic adenosine 3',5'-monophosphate accumulation in isolated preovulatory rat follicles. *Neuroendocrinology* 1987 46:69-74
8. Brännström M, Woessner Jr JF, Koos RD, Sear CHJ, LeMaire WJ. Inhibitors of mammalian tissue collagenase and metalloproteinases suppress ovulation in the perfused rat ovary. *Endocrinology* 1988 122:1715-1721
9. Morioka N, Brännström M, Koos RD, LeMaire WJ. Ovulation in the perfused ovary in vitro: further evidence that estrogen is not required. *Steroids* 1988 51:173-183
10. Brännström M, Boberg BM, Törnell J, Janson PO, Ahrén K. Effects of inhibitors of protein synthesis on the ovulatory process of the perfused rat ovary. *J Reprod Fert* 1989 85:451-459
11. Brännström M, Hellberg P. Bradykinin potentiates LH-induced follicular rupture in the rat ovary perfused in vitro. *Hum Reprod* 1989 4:475-481
12. Brännström M, Janson PO. Progesterone is a mediator in the ovulatory process of the in vitro-perfused rat ovary. *Biol Reprod* 1989 40:1170-1178
13. Brännström M, Larson L, Basta B, Hedin L. Regulation of prostaglandin endoperoxide synthase by cyclic adenosine 3', 5' -monophosphate in the in vitro-perfused rat ovary. *Biol Reprod* 1989 41:513-521
14. Löfman CO, Brännström M, Holmes PV, Janson PO. Ovulation in the isolated perfused rat ovary as documented by intravital microscopy. *Steroids* 1989 54:481-490
15. Törnell J, Brännström M, Magnusson C, Billig H. Effects of follicle stimulating hormone and purines on rat oocyte maturation. *Mol Reprod Develop* 1990 27:254-260
16. Hellberg P, Brännström M. A prostacyclin analogue, Iloprost, augments the ovulatory response of the LH-stimulated in vitro perfused rat ovary. *Prostaglandins* 1990 40:361-371
17. Hellberg H, Holmes PV, Brännström M, Olofsson J, Janson PO. Inhibitors of lipoxygenase increase the ovulation rate in the in-vitro perfused luteinizing hormone-stimulated rabbit ovary. *Acta Physiol Scand* 1990 138:557-564
18. Hellberg P, Larson L, Olofsson J, Hedin L, Brännström M. Stimulatory effects of bradykinin on the ovulatory process in the in vitro-perfused rat ovary. *Biol Reprod* 1991 44:269-274
19. Larson L, Olofsson J, Hellberg P, Brännström M, Selstam G, Hedin L. Regulation of prostaglandin biosynthesis by luteinizing hormone and bradykinin in rat preovulatory follicles in vitro. *Prostaglandins* 1991 41:111-121
20. Hellberg P, Thomsen P, Janson PO, Brännström M. Leukocyte supplementation increases the luteinizing hormone-induced ovulation rate in the in vitro-perfused rat ovary. *Biol Reprod* 1991 44:791-797

21. Brännström M, Josefsson GB, Liljestrand J. Contraception and sexuality in an area-specific group of Swedish women 15 - 34 years of age. *Contraception* 1991 44:445-452
22. Brännström M, Josefsson GB, Cederberg Å, Liljestrand J. Prevalence of genital Chlamydia trachomatis infection among women in a Swedish primary health care area. *Scand J Infect Dis* 1992 24:41-46
23. Wang LJ, Brännström M, Robertson SA, Norman RJ. Tumor necrosis factor α in the human ovary: presence in follicular fluid and effects on cell proliferation and prostaglandin production. *Fertil Steril* 1992 58:934-940
24. Clague N, Sevcik M, Stuart G, Brännström M, Janson PO, Jarrel JF. The effect of estrous cycle and buthionine sulfoximine on glutathione release from the in vitro perfused rat ovary. *Reprod Toxicol* 1992 6:533-539
25. Brännström M, Wang LJ, Norman RJ. Effects of cytokines on prostaglandin production and steroidogenesis of rat preovulatory follicles in vitro. *Biol Reprod* 1993 48:165-171
26. Brännström M, Wang LJ, Norman RJ. Ovulatory effect of interleukin-1 β on the perfused rat ovary. *Endocrinology* 1993 132:399-404
27. Brännström M, Mayrhofer G, Robertson SA. Localization of leukocyte subsets in the rat ovary during the periovulatory period. *Biol Reprod* 1993 48:277-286
28. Liljestrand J, Josefsson GB, Brännström M. Characteristics of young female smokers in a Swedish primary health care area. *Scand J Prim Health Care* 1993 11:157-160
29. Brännström M. Inhibitory effect of mifepristone (RU 486) on ovulation in the isolated perfused rat ovary. *Contraception* 1993 48:393-402
30. Brännström M, MacLennan AH. Relaxin induces ovulations in the in-vitro perfused rat ovary. *Hum Reprod* 1993 8:1011-1014
31. Brännström M, Norman RJ, Seamark RF, Robertson SA. Rat ovary produces cytokines during ovulation. *Biol Reprod* 1994 50:88-94
32. Brännström M, Pascoe V, Norman RJ, McClure N. Localization of leukocyte subsets in the follicle wall and in the corpus luteum throughout the human menstrual cycle. *Fertil Steril* 1994 61:488-495
33. Brännström M, Giesecke L, Moore IC, van den Heuvel CJ, Robertson SA. Leukocyte subpopulations in the rat corpus luteum during pregnancy and pseudopregnancy. *Biol Reprod* 1994 50:1161-1167
34. Bonello NP, Norman RJ, Brännström M. Interleukin-1 β inhibits luteinizing hormone-induced plasminogen activator activity in rat preovulatory follicles in vitro. *Endocrine* 1995 3:49-54
35. Wang LJ, Brännström M, Pascoe V, Norman RJ. Cellular composition of primary cultures of human granulosa-lutein cells and the effect of cytokines on cell proliferation. *Reprod Fertil Dev* 1995 7:21-26
36. Brännström M, Bonello NP, Wang LJ, Norman RJ. Effects of tumour necrosis factor α (TNF α) on ovulation in the rat ovary. *Reprod Fertil Dev* 1995 7:67-73
37. Tozawa H, Brännström M, Petrucco O, Walker S, Chambers H, Pascoe V, Norman RJ. Distribution of leukocyte subtypes in the sheep ovary after laser drilling. *Hum Reprod* 1995 3:544-550

38. Brännström M, Bonello NP, Norman RJ, Robertson SA. Reduction of ovulation rate in the rat by administration of a neutrophil-depleting monoclonal antibody. *J Reprod Immunol* 1995 29:265-270
39. Brännström M, Flaherty S. Methodology and characterization of an in vitro perfusion model for the mouse ovary. *J Reprod Fert* 1995 105:177-183
40. Hellberg P, Larson L, Olofsson J, Brännström M, Hedin L. Regulation of the inducible form of prostaglandin endoperoxide synthase in the perfused rat ovary. *Mol Hum Reprod* 1996 2:111-116
41. Runesson E, Boström E-K, Janson PO, Brännström M. The human preovulatory follicle is a source of the chemotactic cytokine interleukin-8. *Mol Hum Reprod* 1996 2:245-250
42. Bonello NP, McKie K, Jasper M, Andrew L, Ross N, Braybon E, Brännström M, Norman RJ. Inhibition of nitric oxide: effects on interleukin-1 β -enhanced ovulation rate, steroid hormones, and ovarian leukocyte distribution at ovulation in the rat. *Biol Reprod* 1996 54:436-445
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44. Zackrisson U, Mikuni M, Wallin A, Delbro D, Hedin L, Brännström M. Cell-specific localization of nitric oxide synthases (NOS) in the rat ovary during follicular development, ovulation and luteal formation. *Hum Reprod* 1996 11:2667-2673
45. Wang L-J, Brännström M, Cui K-H, Simula AP, Hart RP, Maddocks S, Norman RJ. Localisation of mRNA for interleukin-1 receptor and interleukin-1 receptor antagonist in the rat ovary. *J Endocrinol* 1997 152:11-17
46. Ekerhovd E, Brännström M, Alexandersson M, Norström A. Evidence for nitric oxide mediation of contractile activity in isolated strips of the human Fallopian tube. *Hum Reprod* 1997 12:301-305
47. Bokström H, Brännström M, Alexandersson M, Norström A. Leukocyte subpopulations in the human uterine cervical stroma at early and term pregnancy. *Hum Reprod* 1997 12:586-590
48. Sundfeldt K, Piontkewitz Y, Ivarsson K, Nilsson O, Hellberg P, Brännström M, Janson PO, Enerbäck S, Hedin L. E-cadherin expression in human epithelial ovarian cancer and normal ovary. *Int J Cancer* 1997 74:275-280
49. Pall M, Hellberg P, Brännström M, Mikuni M, Peterson CM, Sundfeldt K, Nordén B, Hedin L, Enerbäck S. The transcription factor C/EBP β and its role in ovarian function; evidence for direct involvement in the ovulatory process. *EMBO J* 1997 16:5273-5279
50. Van der Hoek KH, Woodhouse CM, Brännström M, Norman RJ. Effects of interleukin (IL)-6 on luteinizing hormone- and IL-1 β -induced ovulation and steroidogenesis in the rat ovary. *Biol Reprod* 1998 58:1266-1271
51. Mikuni M, Yoshida M, Hellberg P, Peterson CA, Edwin SS, Brännström M, Peterson CM. The lipoxygenase inhibitor, nordihydroguaiaretic acid, inhibits ovulation and reduces leukotriene and prostaglandin levels in the rat ovary. *Biol Reprod* 1998 58:1211-1216
52. Aziz A, Petrucco OM, Makinoda S, Wikholm G, Svendsen P, Brännström M, Janson PO. Transarterial embolization of the uterine arteries: patient reactions and effects on uterine vasculature. *Acta Obstet Gynecol Scand* 1998 77:334-340

53. Brännström M, Zackrisson U, Hagström H-G, Josefsson B, Hellberg P, Granberg S, Collins WP, Bourne T. Preovulatory changes of blood flow in different regions of the human follicle. *Fertil Steril* 1998 69:435-442
54. Zackrisson U, Brännström M, Granberg S, Janson PO, Collins WP, Bourne TH. Acute effects of a transdermal nitric oxide donor on perifollicular and intrauterine blood flow. *Ultrasound Obstet Gynecol* 1998 12:50-55
55. Mikuni M, Brännström M, Hellberg P, Peterson CA, Pall M, Edwin SS, Peterson CM. Saralasin-induced inhibition of ovulation in the rat ovary is not replicated by the angiotensin II type-2 receptor antagonist PD123319. *Am J Obstet Gynecol* 1998 179:35-40
56. Ekerhovd E, Brännström M, Delbro D, Norström A. Nitric oxide mediated inhibition of contractile activity of the human uterine cervix. *Mol Hum Reprod* 1998 4:915-920
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58. Karström-Encrantz L, Runesson E, Boström E-K, Brännström M. Selective presence of the chemokine growth-regulated oncogene α (GRO α) in the human follicle and secretion from cultured granulosa-lutein cells at ovulation. *Mol Hum Reprod* 1998 11:1077-1083.
59. Mikuni M, Pall M, Peterson CM, Peterson CA, Hellberg P, Brännström M, Richards JS, Hedin L. The selective prostaglandin endoperoxide synthase 2 inhibitor, NS 398, reduces prostaglandin production and ovulation in vivo and in vitro in the rat. *Biol Reprod* 1998 59:1077-1083
60. Bokström H, Atterfelt P, Alexandersson M, Brännström M, Norström A. Preoperative cervical softening before first trimester legal abortion by mifepristone and misoprostol: a double-blind, randomized, clinical, biochemical and immunohistochemical study. *Contraception* 1998 58:157-163
61. Ivarsson K, Runesson E, Sundfeldt K, Haeger M, Hedin L, Janson PO, Brännström M. The chemotactic cytokine interleukin-8 - a cyst fluid marker for malignant epithelial ovarian cancer? *Gynecol Oncol* 1998 71:420-423
62. Sundfeldt K, Ivarsson K, Carlsson M, Enerbäck S, Janson PO, Brännström M, Hedin L. The expression of CCAAT/enhancer binding proteins (C/EBP) in the human ovary in vivo: specific increase in C/EBP β during epithelial tumour progression. *Br J Cancer* 1999 79:1240-1248
63. Enskog A, Henriksson M, Unander M, Nilsson L, Brännström M. Prospective study of the clinical and laboratory parameters of patients in whom ovarian hyperstimulation syndrome developed during controlled ovarian hyperstimulation for in vitro fertilization. *Fertil Steril* 1999 71:808-814
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65. Brännström M, Fridén BE, Jasper M, Norman RJ. Variations in peripheral blood levels of immunoreactive tumor necrosis factor α (TNF α) throughout the menstrual cycle and secretion of TNF α from the human corpus luteum. *Eur J Obstet Gynecol Reprod Med* 1999 83:213-217
66. Ekerhovd E, Weijdegård B, Brännström M, Norström A. Nitric oxide-mediated effects on myometrial contractility at term during prelabor and labor. *Obstet Gynecol* 1999 93:987-994.

67. Fridén BE, Hagström H-G, Lindblom B, Sjöblom P, Wallin A, Brännström M, Hahlin M. Cell characteristics and functions of two enriched fractions of human luteal cells during prolonged culture. *Mol Hum Reprod* 1999 5:714-719
68. Mitsube K, Mikuni M, Matousek M, Brännström M. Effects of a nitric oxide donor and nitric oxide synthase inhibitors on luteinizing hormone-induced ovulation in the ex-vivo perfused rat ovary. *Hum Reprod* 1999 14:2537-2543
69. Ekerhovd E, Brännström M, B Weijdegård, Norström A. Localization of nitric oxide synthase and effects of nitric oxide donors on the human Fallopian tube. *Mol Hum Reprod* 1999 5:1040-1047
70. Matousek M, Mikuni M, Mitsube K, Yoshida M, Brännström M. Inhibition of ovulation by tyrosine kinase inhibitors in the in vitro perfused rat ovary. *J Reprod Fert* 1999 117:379-385
71. Zackrisson U, Mikuni M, Peterson CM, Nilsson B, Janson P-O, Brännström M. Evidence for the involvement of blood flow-related mechanisms in the ovulatory process of the rat. *Hum Reprod* 2000 15:264-272
72. Fridén BE, Wallin A, Brännström M. Phase-dependent influence of nonsteroidogenic cells on steroidogenesis and prostaglandin production by the human corpus luteum. *Fertil Steril* 2000 73:359-365
73. Enskog A, Nilsson L, Brännström M. Peripheral blood concentrations of inhibin B are elevated during gonadotropin stimulation in patients who later develop OHSS and inhibin A concentrations are elevated after OHSS onset. *Hum Reprod* 2000 15:532-538
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78. Pall M, Mikuni M, Mitsube K, Brännström M. Time-dependent ovulation inhibition of a selective progesterone-receptor antagonist (ORG 31710) and effects on ovulatory mediators in the in vitro perfused rat ovary. *Biol Reprod* 2000 63:1652-1657
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81. Enskog A, Nilsson L, Brännström M. Low peripheral blood levels of the immunosuppressive cytokine interleukin-10 (IL-10) at the start of gonadotropin stimulation indicates increased risk for development of ovarian hyperstimulation syndrome (OHSS). *J Reprod Immunol* 2001 49:71-85

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83. Ivarsson K, Sundfeldt K, Brännström M, Hellberg P, Janson PO. Diverse effects of FSH and LH on proliferation of human ovarian surface epithelial cells. *Hum Reprod* 2001 16:18-23
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85. Matousek M, Carati C, Gannon B, Brännström M. Novel method for intrafollicular pressure measurements in the rat ovary: increased intrafollicular pressure after hCG stimulation. *Reproduction* 2001 121:307-314
86. Matousek M, Mitsube K, Mikuni M, Brännström M. Inhibition of ovulation in the rat by a leukotriene B4 receptor antagonist. *Mol Hum Reprod* 2001 7:35-42
87. Sundfeldt K, Ivarsson K, Rask K, Haeger M, Hedin L, Brännström M. Higher levels of soluble E-cadherin in cyst fluid from malignant ovarian tumours than in benign cysts. *Anticancer Res* 2001 21:65-70
88. Enskog A, Nilsson L, Brännström M. Plasma levels of free vascular endothelial growth factor 165 (VEGF 165) during gonadotropin stimulation in in vitro fertilization (IVF) patients developing ovarian hyperstimulation syndrome (OHSS): results of a prospective cohort study controls. *Eur J Obstet Gynecol Reprod Biol* 2001 96:196-201
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94. Mitsube K, Zackrisson U, Brännström M. Nitric oxide regulates ovarian blood flow in the rat during the periovulatory period. *Hum Reprod* 2002;17:2509-2516
95. Racho El-Akouri R, Kurlberg G, Dindelegan G, Mölne J, Wallin A, Brännström M. Heterotopic uterine transplantation by vascular anastomosis in the mouse. *J Endocrinol* 2002;174:157-166
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100. Racho El-Akouri R, Kurlberg G, Brännström M. Successful uterine transplantation in the mouse: pregnancy and post-natal development of offspring. *Hum Reprod*. 2003;18:2018-2023
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