転写因子SF-1をターゲットとする難治性卵胞発育不全に対する新たな治療法の開発

2003 Fiscal Year Final Research Report Summary

Steroidogenic factor-1 as a therapeutic target for of severe ovarian failure

Research Project

Project/Area Number

13470348

Research Category

Grant-in-Aid for Scientific Research (B)

Allocation Type

Single-year Grants

Section

一般

Research Field

Obstetrics and gynecology

Research Institution

Kanazawa University

Principal Investigator

SHOZU Makio Kanazawa University, Hospital, Center for perinatal and reproductive health, associate professor, 医学部附属病院, 助教授 (30226302)

Co-Investigator(Kenkyū-buntansha)

INOUE Masaki Kanazawa University, Graduate School of Obstetrics and Gynecology, professor, 医学系研究科, 教授 (10127186)
MURAKAMI Koichi Kanazawa University, Hospital, Center for perinatal and reproductive health, assistant professor, 医学部附属病院, 助手 (20242555)

Project Period (FY)

2001 – 2003

Keywords

aromatase / granulosa cells / steroidogenic factor-1 / IL-β / estrogen / ovulation

Research Abstract

Aromatization of androgens, catalyzed by aromatase P450, is essential for estrogen biosynthesis, hetero for folliculogenesis. Here we investigated the transcriptional regulation of aromatase in granulosa cells and identify both steroidogenic factor-1 and LRH-1 as important regulatory factors binding to the nuclear half site of proximal promoter PII of aromatase. Both transcriptional factors were expressed in granulosa cell of healthy growing follicles and luteal cells. COV432, a cell lines established from a human granulosa cell, express exclusively LRH-1 and granulosa cells in growing follicle expressed much LRH-1 than SF-l. Granulosa luteal cells expressed much LRH-1, while theca luteal cells almost exclusively expressed SF-1. Co-expression of SF-1 or LRH-1 stimulated the expression of promoter vectors containing various lengths of PII sequences. We also investigated mechanism of IL-lb- and GnRH agonsit-induced induction of aromatase in endometriosis-derived stromal cells. IL-lb increased aromatase expression through COX2-dependent and COX2-independent mechanisms. GnRH agonists transiently stimulated aromatase expression through the activation of PKC. IGF-1 and BMP also stimulated aromatase expression in the presence of FSH.

Research Products (27 results)

[Journal Article] Spatially Heterogenous Expression of Aromatase P450 through Promoter II Is Closely Correlated with the Level of Steroidogenic Factor-1 Transcript in Endometrioma Tissues. 2002

[Journal Article] Regulation of aromatase activity in bone-derived cells : possible role of mitogen-activated protein kinase 2001

[Journal Article] Inhibition of in situ expression of aromatase P450 in leiomyoma of the uterus by leuprorelin acetate. 2001

[Journal Article] Leak-proof puncture of ovarian cysts : instant mounting of plastic bag using cyanoacrylate adhesive. 2001

[Journal Article] Regulation of aromatase activity in bone-derived cells : possible role of mitogen-activated protein kinase 2001

[Journal Article] Inhibition of in situ expression of aromatase P450 in leiomyoma of the uterus by leuprorelin acetate. 2001

[Journal Article] Decreased expression of early growth response-1 and its role in uterine leiomyom a growth

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