Office of Technology Management

Rabbit Polyclonal Antibodies Specific for the Extracellular and Transmembrane Domains of LH/CG

Technology Reference

CX031

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Field

Obstetrics and Gynecology

Key Words

Human Luteinizing Hormone (LH)

Chorionic Gonadotrophin(CG)

Extracellular Domain

Transmembrane Domain

Western Blot Analysis

License Status

Seeking licensing partner

Patent Status

Protected by trade secret

Overview

Successful initiation of pregnancy requires a precisely timed synchrony between endometrial development and the implanting blastocyst. It has been demonstrated that in addition to the specific changes that are induced by estrogen and progesterone during the window of receptivity, infusion of chorionic gonadotrophin (CG) in a manner that mimics blastocyst transit further modulates the uterine environment.

Infertility has long been associated with endometriosis. Specific or abnormal molecular changes within the uterine endometrium have been thought to contribute to infertility. The expression of markers of uterine receptivity is markedly downregulated as early as early as 1 and 4 months post-inoculation of menstrual endometrium to induce infertility has been demonstrated in baboons.

Following the establishment of pregnancy, the endometrial stromal fibroblasts transform to a decidual phenotype. This transformation is characterized by the expression of insulin-like growth factor binding protein-1 (IGFBP-1) in these cells.

Technical Summary

This invention consists of two polyclonal antibodies that have been prepared against the extracellular domain and the transmembrane domain of the Luteinizing Hormone and Chorionic Gonadotrophin (LH/CG) receptor. The LH/CG receptor is a seven transmembrane receptor found primarily in ovarian tissue, but has been shown to be present in a number of extra-ovarian tissues.

The seven transmembrane receptor, LH/CG receptor, is coded by 11 exons. The transmembrane and intracellular domain is coded by exon 11 while the extracellular domain is coded by exons 1-10. The receptor serves to activate signaling pathways upon binding to ligand. The major signaling pathway results in the increase of endogenous cAMP. However, MAPK are also activated by the receptor.

Benefits

- Useful for the determination of expression patterns of key receptors in the reproductive process.
- Useful diagnostic tool to confirm pathology in uterine cancer.

Areas of Application

- Western Blot Analysis
- Immunocytochemical Localization

Stage of Development

- Animal model studies complete