



Office of Technology Management

Polyclonal Antibody (IGFBP-1) Specific for Baboon Insulin-like Growth Factor Binding Protein-1 (IGFBP-1)

Technology Reference

CX032

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Field

Obstetrics and
Gynecology

Key Words

Insulin-Like Growth
Factor Binding
Protein (IGFBP-1)

Enzyme-Linked
Immuno- absorbent
Assay (ELISA)

Radioimmunoassay
(RIA)

Western Blot
Analysis

License Status

Seeking licensing
partner

Patent Status

Protected by trade
secret

Overview

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 are markedly down regulated as early as 1 and 4 months post-inoculation of menstrual endometrium to induce the disease 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.

The binding affinity of IGFBP-1 binds to IGF I and II is dependent on the state of phosphorylation. IGFBP-1 is thought to function as binding and carrier protein for IGFs. Overexpression of IGFBP-1 in mouse transgenic models leads to impaired metabolism and compromised uterine function. Deletion of IGFBP-1 in mouse transgenics does not result in infertility perhaps due to compensation by the other five members of the IGFBP family.

Technical Summary

This invention consists of a polyclonal antibody against the primate form of Insulin-like Growth Factor Binding Protein-1 (IGFBP-1). This is both a secreted and membrane bound molecule produced by the liver and the decidualized stromal cells of the uterine endometrium. IGFBP-1 preferentially binds insulin-like growth factors (IGF) I and II with increased binding when is phosphorylated. It also has a RGD peptide domain on the c-terminus that initiates interactions with cell adhesion molecules.

IGFBP-1 was made against the native protein isolated from Baboon amniotic fluid and after treatment injected into male rabbits. High titre antibodies were isolated as Immunoglobulin G or IgG fractions.

Benefits

- Indicator for metabolic diseases that affect insulin bioavailability
- Indicator for preeclampsia.
- Potential development into diagnostic assay

Areas of Application

- Analyzing circulating levels of IGFBP-1
- ELISA or RIA
- Western Blot Analysis
- Immunocytochemical Localization

Stage of Development

- Animal model studies complete

