



## Molecular Markers for Women's Infertility & Targets for Therapy

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Assays for concentration levels of identified molecular markers in ovarian follicular fluid to:

- (1) diagnose and treat female infertility
- (2) predict fertility success with ovulation induction and in vitro fertilization (IVF).

### Background:

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A major reason women seek assisted reproductive technologies is for treatment of unexplained as well as age-related decline in fertility. While a woman's age is presently the single factor to predict fertility success with ovulation induction and in vitro fertilization (IVF), it is well established that ovarian responses differ among similarly aged women. The inventors have now identified a molecular profile consisting of proteins, lipids and molecules in human ovarian follicular fluid (normally discarded in the IVF process) and correlate their concentrations with in vitro fertilization (IVF) outcome measures.

The correlation of changes in this molecular profile with age, oocyte quality, fertilization rate, and progression of early embryo growth, will give important clues about the factors that regulate the process of fertile oocyte maturation and its pathogenesis.

### Stage of Development:

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**Clinical studies**//Follicular fluid was tested from healthy women aged 18-45 undergoing oocyte retrieval for voluntary oocyte donation or in whom IVF is being performed due to unexplained infertility, ovarian infertility, or defects in male sperm production.

Over 20 molecules were identified by proteomic analyses, mass spectroscopy and peptide sequencing.

### Commercialization:

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Therapeutics  
Diagnostic Kits

### Patent / Licensing Status:

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US Patent pending

### Lead Investigator:

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### Publication:

Von Wald et al (2009) Fertility and Sterility

### Competitive Advantages:

- ✓ Molecular Markers identified in human samples
- ✓ Identification of competent eggs prior to fertilization may decrease the need for implantation of several embryos, reducing the risk of multiple births.

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